REPORT RESUMES

ED 018 634 VT 003 584

THE ADMINISTRATION AND PLANNING OF VOCATIONAL-TECHNICAL EDUCATION IN PENNSYLVANIA.

DAUWALDER (DONALD D.) AND ASSOCIATES

PENNSYLVANIA STATE BOARD FOR VOCATIONAL EDUCATION

PUB DATE DEC 64

EDRS PRICE MF-$0.75 HC-$6.16 152P.

DESCRIPTORS- *VOCATIONAL EDUCATION, POPULATION TRENDS, EMPLOYMENT PATTERNS, *EMPLOYMENT TRENDS, *EMPLOYMENT OPPORTUNITIES, EDUCATIONAL PLANNING, STATE LEGISLATION, SUPERVISION, PROGRAM EVALUATION, CERTIFICATION, EDUCATIONAL FACILITIES, ADMINISTRATIVE CHANGE, FINANCIAL POLICY, *EDUCATIONAL FINANCE, *EDUCATIONAL ADMINISTRATION, ADMINISTRATIVE ORGANIZATION, EDUCATIONAL NEEDS, COMMUNITY COLLEGES, TECHNICAL EDUCATION, PENNSYLVANIA,

MAJOR FINDINGS AND RECOMMENDATIONS OF A STUDY OF CURRENT AND PROPOSED VOCATIONAL EDUCATION PROGRAMS IN THE STATE ARE SUMMARIZED. AREAS COVERED ARE (1) EMPLOYMENT TRENDS AND JOB OPPORTUNITIES IN WHICH, ON THE BASIS OF THE ANALYSIS OF 12 MAJOR STATISTICAL AREAS AS TO POPULATION, URBAN AREAS, INDUSTRIAL AREAS, EDUCATIONAL OPPORTUNITIES, AND EMPLOYMENT OPPORTUNITIES, IT WAS CONCLUDED THAT VARIANCE BETWEEN AREAS WAS GREAT ENOUGH TO REQUIRE EDUCATIONAL PLANNING ONLY ON THE BASIS OF FURTHER LOCAL STUDY, (2) ORGANIZATION OF THE ADMINISTRATION OF VOCATIONAL-TECHNICAL EDUCATION WHICH RECOMMENDED THAT THE STATE BOARD OF EDUCATION HAVE INDEPENDENT AUTHORITY OVER THE DEPARTMENT OF PUBLIC INSTRUCTION, THAT REORGANIZATION TAKE PLACE AND THAT STATE SERVICES BE EXPANDED, (3) PRESENT PROGRAMS AND PLANNING WHICH IDENTIFIED WEAKNESSES AND ISSUES IN THE STATEWIDE PROGRAM THAT NEED TO BE RESOLVED BY THE STATE BOARD, (4) PROPOSED EDUCATIONAL ORGANIZATION WHICH INCLUDED RECOMMENDATIONS ON SUCH PROBLEMS AS PROGRAM REVISION, REIMBURSEMENT PATTERNS, EXPERIMENTAL PROGRAMS, ENROLLMENT STANDARDS, AREA SCHOOLS, TECHNICAL INSTITUTES, COMMUNITY COLLEGES, FEES, NEED DETERMINATION, AND ARTICULATION, (5) FISCAL POLICY AND LEGISLATION WHICH ANALYZED CURRENT FINANCING, ALLOCATION OF FUNDS, AND SALARY INEQUITIES AND RECOMMENDED LEGISLATION TO CORRECT THE PROBLEMS, (6) SUPERVISION, EVALUATION, AND CERTIFICATION WHICH MADE SPECIFIC SUGGESTIONS CONCERNING CURRICULUM DEVELOPMENT, RESEARCH AND EVALUATION, TEACHER TRAINING AND CERTIFICATION, AND COUNSELING AND GUIDANCE, AND (7) EDUCATIONAL SPECIFICATIONS WHICH SUGGESTED METHODS FOR ADMINISTERING STANDARDS THROUGH THE DEPARTMENT OF PUBLIC INSTRUCTION AND THE STATE BOARD. (JM)

ED018634

THE ADMINISTRATION AND FINANCING OF VOCATIONAL-TECHNICAL EDUCATION IN PENNSYLVANIA

A Report to the State Board for Vocational Education

December, 1964

VTC03584

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January 13, 1965

MEMO: The Administration and Financing of Vocational-Technical Education in Pennsylvania

FROM: Severino Stefanon

Severino Stefanon

The State Board for Vocational Education has received a report titled "The Administration and Financing of Vocational-Technical Education in Pennsylvania, prepared by Donald D. Dauwalder and Associates, under contract with the Board.

The opinions and conclusions of the report are those of Donald D. Dauwalder and Associates.

The State Board for Vocational Education will study this report in conjunction with other information in its possession.

The availability of this report for public examination in no way indicates that any of its conclusions are policy of the State Board for Vocational Education.

A limited number of copies of this report is available.
Address request to:

Severino Stefanon, Secretary
State Board of Education
333 Education Building
Harrisburg

U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
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THE ADMINISTRATION AND FINANCING OF VOCATIONAL-TECHNICAL EDUCATION IN PENNSYLVANIA

A Survey of Vocational-Technical Education as offered and planned in several types and levels of schools in Pennsylvania and Recommendations on how such programs can be better coordinated, administered and financed.

By

DONALD D. DAUWALDER AND ASSOCIATES

Under Contract Arrangements with
the Pennsylvania State Board for Vocational Education
Contract Number DG-6, 01-16-83-4-400-310, ME No. 3

December, 1964

THE ADMINISTRATION AND FINANCING OF VOCATIONAL-TECHNICAL EDUCATION IN PENNSYLVANIA

A Summary Of Major Recommendations Made in the Report to the State Board for Vocational Education

by Donald D. Dauwalder and Associates

December, 1964

INTRODUCTION

This is a brief summary of the major findings and recommendations contained in the complete report submitted to the State Board for Vocational Education under the provisions of Contract Number DG-6, 01-16-83-4-400-310, ME No. 3.

Neither the findings nor recommendations are explained in this summary and no statistical information upon which they were based is included. Complete copies of the report are available for review and for limited distribution through the office of Mr. Severino Stefanon, Secretary to the State Board of Education.

The following subdivisions conform to section numbers and titles as contained in the report.

SECTION I
INTRODUCTION AND HISTORY

This section and the Foreword outline the reasons for the survey and contain an historical review of major educational legislation in the Commonwealth which relates to vocational-technical education and to the redistricting of school districts.

The Introduction also includes excerpts from the contract which constitute the objectives of the survey.

SECTION II
EMPLOYMENT TRENDS AND JOB OPPORTUNITIES

This section analyzes the population of the Commonwealth, its relationship to national population trends, and compares population changes in the 12 major statistical areas in the Commonwealth. Population is also related to changes within various age groups and to the out-migration from the Commonwealth of a large percentage of the population within the most employable age groups.

Included are analyses of: population, the number and size of urban areas, the industrial areas and major employment opportunities, and the vocational educational offerings which are available in each of the 67 counties of the Commonwealth.

Changes from 1950 through 1963 for each of the 12 major statistical areas in the Commonwealth are reported for the major employment groupings on which the United States Department of Labor maintains monthly records. These employment groupings include:

Manufacturing of Durable Goods; Manufacturing of Non-Durable Goods; All Manufacturing Employment; Contract Construction; Transportation and Public Utilities; Wholesale and Retail Trade; Finance, Insurance, and Real Estate; Service and Miscellaneous; Government; Farm; Self-Employment, Including Unpaid Family and Domestic Workers; and All Non-Manufacturing Employment.

The employment-unemployment ratios for each of the major statistical areas are included showing the changes in total employment; changes in the total civilian work force; and changes in the unemployment ratios from 1950 through 1963. In addition, the high and low ratios for each factor are included and related to the year in which each high and low occurred. Employment-unemployment is further analyzed in connection with general classifications of workers for the period 1950 to 1960.

All of the factors which are analyzed and discussed in this section vary so materially between statistical areas and between counties that local determinations of all factors are required before any county or district plans the specific types or levels of vocational-technical education which should be offered in that district or county.

It is further recommended that the Department of Public Instruction make additional and current demographic information available to local districts and counties and provide staff and facilities to assist in the evaluation of educational needs. It is essential that all such studies, whether conducted by the local district or the Department, provide facilities for a continuing analysis of employment-unemployment trends, migration ratios, etc.

It is further suggested that no fixed attendance ratio or geographical area should determine either the number or type of curricula to be offered within such an area. These decisions must be based on current studies and related to student needs and interests and to local and regional employment potential.

SECTION III
ORGANIZATION OF THE ADMINISTRATION OF VOCATIONAL-TECHNICAL EDUCATION

This section reviews the responsibility and authority of the State Board of Education, of the Superintendent of Public Instruction, and of the Bureau of Technical and Continuing Education. Major recommendations include:

1. The State Board of Education should have independent supervisory, planning, and administrative authority over the Department of Public Instruction.

2. The State Board should be the appointing authority for the Department of Public Instruction.

    a. The State Superintendent should be appointed by the Board.

    b. Assistant Superintendents and Division Chiefs should be appointed by the Superintendent and approved by the Board. All other DPI staff should be nominated by Assistant Superintendents or Directors and appointed by the Superintendent.

3. The Bureau of Technical and Continuing Education should be reorganized on a regional basis and headed by a Director, who should be raised to the Assistant Superintendent level within the Department. The report contains a detailed explanation of the proposed regional organization and outlines suggested duties of four Assistant State Directors, the Regional Directors, and Regional Staff members.

4. Vocational-technical education in the community colleges, high schools, and area vocational-technical schools must be planned and supervised on a more centralized and coordinated basis. It is recommended that the supervision of all vocational-technical education should be assigned to the State Director of Vocational-Technical Education.

5. The State Director of Vocational-Technical Education should activate comprehensive programs for briefing district directors and supervisors and for training potential directors, supervisors, and teachers of vocational-technical education.

6. The State Director should activate a committee composed of representatives of all divisions and vocational services to review vocational reimbursement patterns and reporting mechanics and to devise one pattern that could be followed by all vocational services and in all levels of vocational education. Legislation, as required, should be proposed.

7. The State Board and the State Director should launch a well financed and ably manned program of curriculum development and production of instruction materials to be conducted in close articulation with the needs of local districts and in close cooperation with interested agencies in agriculture, business, and industry.

8. The increasing interrelationships between vocational education, other governmental agencies, and business and industry requires that the State Director add to his staff someone with the full-time responsibility of providing liaison with these agencies and groups.

9. The objectives of field supervision and the functions of field supervisors should be evaluated in the light of current educational patterns and needs. Traditional allignments of subject matter areas must be revised to meet present day objectives and the needs of students, employers, and educators. Department and district staffs must be trained to function under this broadening concept of service.

Although all the above recommendations relate to how a reorganized vocational-technical administration should function, they should be implemented whether the Bureau of Technical and Continuing Education is reorganized or not. All, except recommendation three (the actual reorganization), are discussed in more detail in later sections.

SECTION IV
PRESENT PROGRAMS AND PLANNING

This section analyzes many of the provisions of the legislation and the instructional bulletins released by the Department of Public Instruction in connection with area vocational-technical schools, technical institutes, and community colleges.

The weaknesses in the organization and planning of high school programs, area vocational-technical school programs, technical institutes, and community colleges are discussed. In addition, the possibilities of expanding "comprehensive education" under the provisions of Act 299 are explored.

Specific recommendations relating to this section are contained in Sections V and VI. In this section we have outlined many of the questions which are prevalent throughout the State in connection with the interrelationships between the area vocational-technical schools, comprehensive high schools, technical institutes, and community colleges. These questions should not be considered as objections to any of these types of schools. They, however, are questions which must be resolved by the State Board in order to allow all of these educational units to function practically and to serve best the needs of the students of the Commonwealth. Some of the answers are suggested in the following sections.

SECTION V
PROPOSED EDUCATIONAL ORGANIZATION

This section supplements Section IV and suggests some of the institutions and the parameters within which Pennsylvania should provide a complete and statewide program of vocational-technical education that will meet the demands of its economy and will satisfy the desires of its students as they seek their places in the economy. The institutions which are available or which can be made available under recent legislative enactment are the high schools, area vocational-technical schools or area technical centers, technical institutes, and technical divisions of community colleges.

The following recommendations are discussed in this section:

1. The traditional programs in the high schools must be evaluated and revised to meet currently set objectives and must be related to skill-centered education.
2. The reimbursement patterns for all vocational services should be reconciled into one pattern for all services.
3. Sound vocational programs in the high school, whether traditional or of the newer occupational preparation type, should be reimbursed on the same basis as similar courses in area vocational-technical schools.

4. Steps should be taken immediately to activate some experimental programs in occupational preparation in high schools. There should be a careful selection of districts and instructors to plan and implement these experimental programs. Selected teachers should be involved in curriculum development workshops.

5. The minimum standards of enrollment in high schools constituting a district and the assumption that a relatively fixed percentage of students will attend area schools, which has not been related to either percentages of attendance in the past nor to the types of programs offered, must be modified to conform to different needs in different geographical and/or economic areas.

6. The "area" pattern of having students divide their day between "education" in their home school and "vocational training" in the area vocational-technical school tends to aggravate an erroneous concept that education and vocational education are two different things. All policy, regulations and training should be geared to changing this concept.

7. The State Board and the DPI must expand their areas of interest in skill-centered educational programs. A major portion of Federal funds for vocational education should be used to develop new and comprehensive skill-centered programs in most high schools and/or feeder schools as well as in area schools. Only by such expansion of the scope of vocational education will the Commonwealth ever prepare the number of workers needed for the expanding economy which is bound to develop.

8. Area vocational-technical schools should be encouraged to develop in all areas where such skill-centers are needed and at least one should be encouraged to develop into a technical institute, at the high school level, offering complete education to selected technical students.

9. Several area vocational-technical schools should be encouraged to develop into technical "centers" where:

   a. Teachers from comprehensive schools could take classes for special experiments or work on special equipment.

   b. Large group lecture-demonstrations involving sophisticated equipment could be staged.

   c. Individual students could be referred for advanced study.

   d. Sophisticated audio-visual materials could originate and be distributed by closed circuit TV or otherwise.

   e. Self-instruction devices could be developed and tried in "learning laboratory" situations.

10. Several technical institutes should be established and encouraged to explore experimentally all of the educational advantages of such separate specialized institutions. They should not be located in areas in direct competition with a developing community college.

11. Community colleges should be developed throughout the Commonwealth as rapidly as possible. There should be no annual limitation on the number which can be approved by the State Board.

12. The tendency of some educators to follow a pattern of "copying" some other state's community college program rather than developing a completely different system to provide the continuum of education required in this Commonwealth should be studied by the State Board.

13. The problems of cost and tuition and a discussion of the conceivability that in the forseeable future the State might extend free education to include the technical institute and/or the community college should be studied by the State Board and all districts planning to implement any new vocational-technical programs.

14. A continuing study should be conducted in each county and/or each area vocational-technical district to determine the current needs and requirements of industry and their acceptance of various types of training at the several levels of education available under the three Acts. The present tendency in most AVTS units to offer relatively high level technical programs must be evaluated, both by the DPI and employer advisory committees. These programs have been successful to date. Placements have been good. However, such records will probably change if a much larger percentage of students is enrolled on a less selective basis and when technical institute and community college prepared students are available on the labor market.

15. The community college and/or the technical institute should provide the post-high school vocational-technical training of less than baccelaureate level required in the Commonwealth. Any state supported four-year colleges or universities offering such programs should discontinue them as soon as community colleges are able to take over in the area served.

16. Skill-centered curricula, whether offered in high schools, area schools, or at the post-high school level, must be broad in their coverage. Programs must be made available for students with all ability and interest levels. Limited purposes and limited levels of curricula will not materially aid the Commonwealth in establishing the complete educational continuum required to develop and maintain a stable society and economy.

SECTION VI
FISCAL POLICY AND LEGISLATION

This section is concerned with the analysis of the current financing of vocational-technical education; the allocation of State and Federal assistance to the districts; the salary inequities in the Department of Public Instruction; the organization of the Department of Public Instruction; the State Board as a policy-making and administrative unit of State government; the development of the Education Code; and legislation needed to correct some of the problems involved in connection with the items discussed in this report.

Some of the recommendations contained in this section are:

1. Federal funds should not be used to reduce the participation the Commonwealth is mandated to provide local and area districts. We recommend that the State Board ask the Legislature to appropriate sufficient funds to cover the expected State portions of the costs of the provisions of Acts 463 and 484 and of the other mandated provisions of the Public School Code.

2. Federal funds should be used primarily to expand, improve, evaluate, and supervise a comprehensive continuum of vocational-technical education in the Commonwealth. It should be made available to all levels of education from the comprehensive high school through the technical institutes and community colleges. Specific suggestions are made concerning the use of Federal funds.

3. The State Board should work closely with other groups interested in the study of Basic and Capital Reimbursement Fractions and join these groups in making recommendations for the legislative establishment of more realistic reimbursement ratios.

4. With the adding of "vocational, business, and office education" as a participatable program under Act 463 and with the enabling provisions in P.L. 88-210, which allow the comingling of Smith-Hughes, George-Barden, and other Federal funds with the monies provided under P.L. 88-210, it would appear logical for the State law to be revised to eliminate the differences in participation which have previously been allowed the districts for vocational programs on an ADM basis. The $35 allowed for Trade and Industrial, $50 for Distributive Education, and the $20 for Homemaking and Agriculture should be changed and the same amount be allotted for each of these programs and for Business Education on an ADM basis as has been recommended previously in the report. The $75 ADM allowed under Act 463, in addition to the above amounts, should be added to the basic figure established for all skill-centered programs and should be made available both for such programs operated in an area vocational-technical school and comprehensive high schools within an area vocational-technical school attendance area.

5. The State Board of Education is recommending, and legislation will undoubtedly be introduced, to increase the salary of the Superintendent of Public Instruction by some ten to fifteen thousand dollars a year. We believe this to be a realistic figure within which competent personnel can be recruited, and are also recommending the following salary schedules for subordinate personnel within the Department.

   a. The Director of Vocational-Technical Education should be paid a minimum of $20,000 annually. The salary should be the same for the Director of Higher Education and for the Assistant Superintendent for Basic Education. It would also be sound organizational policy for these three positions to carry the title and authority of Assistant Superintendents.

   b. The Director of Instruction Services, the Director of Program Operation, the Director of Inter-Agency Relations, and the Director of Fiscal Operations, which have been recommended in the proposed organization of the Department, should be paid a minimum of $17,500 annually each.

   c. The four Area Directors of Vocational-Technical Education should be paid a minimum of $15,000 annually.

   d. The four major Assistants to each Area Director should receive a minimum of $13,500.

   e. The Area Coordinators in all fields should be raised to a minimum of $11,000 with the range increasing, depending on experience and background, to $12,500.

6. All vocational-technical programs should be subject to the standards established by the State Board for Vocational Education and should be under the direction of a Director of a Division of Vocational-Technical Education. Vocational-Technical education is neither "Basic education" nor "higher education" nor both. It is a continuum of training reaching through the entire educational structure and, as such, must be administered as a unit regardless of whether programs appear in comprehensive high schools, in area vocational-technical schools, in technical institutes, or in community colleges.

7. The State Board is the only duly and legally constituted representative of the General Assembly and the Governor in matters pertaining to the Public School Code and the several Acts related thereto. It is the supervisory authority of the Department of Public Instruction and is the sole representative of the Governor in matters pertaining to the Department of Public Instruction. The State Board must be delegated both the authority and the responsibility required to administer efficiently the educational programs in the Commonwealth.

In addition to the above recommendations, specific items which should be legislatively adjusted relating to vocational-technical education in all levels and types of schools are discussed in this section.

SECTION VII
SUPERVISION, EVALUATION, AND CERTIFICATION

In the past and currently the Bureau of Technical and Continuing Education has not been able to provide much supervision or evaluation of vocational-technical programs. Assistance in other areas such as curriculum development has also been at a minimum. This has been primarily due to lack of staff, but also involved has been the fact that once a program is approved for ADM participation it seems to be forgotten and goes on receiving Federal funds year after year whether the program is good, bad, or indifferent.

A regional office arrangement, with adequate staff, as recommended in Section III, would tend to correct this condition and would materially aid local and area districts in providing more adequate skill-centered training and education.

Specific suggestions concerning curriculum development, research and evaluation, vocational teacher training and certification, and counseling and guidance are discussed in this section. The implementation of the recommendations contained in the narrative which strengthen the operation of the Bureau of Technical and Continuing Education would improve the vocational-technical educational programs which are now offered and which are being planned for the Commonwealth.

SECTION VIII
EDUCATIONAL SPECIFICATIONS

By far, the majority of vocational-technical educational facilities which have operated in Pennsylvania in the past have not been developed in accordance with sound educational planning and specifications.

This section of the report discusses the need for more adequate preliminary planning of facilities and equipment and suggests methods by which such standards should be administered in the Commonwealth through the Department of Public Instruction and the State Board.

Several specific recommendations are made concerning the following:

1. Necessity for educational planning.
2. Educational specifications and the community survey.
3. Who should be involved in educational planning?
4. Site and general campus planning.
5. District philosophy and broad educational objectives.
6. Financial limitations.
7. The campus atmosphere.
8. Relationships and traffic patterns.
9. Planning the educational centers.
10. Planning the individual educational areas and spaces.

SECTION IX
IN SUMMARY

This report has emphasized the need for all sections of the Commonwealth to survey their individual needs for vocational-technical education and to establish the type of school or schools required to meet these needs.

Many recommendations have been contained in the preceding sections which we hope will assist the State Board and the Department of Public Instruction in planning and implementing the best possible types of programs in vocational-technical education.

THE ADMINISTRATION AND FINANCING OF VOCATIONAL-TECHNICAL EDUCATION IN PENNSYLVANIA

A Survey of Vocational-Technical Education as offered and planned in several types and levels of schools in Pennsylvania and Recommendations on how such programs can be better coordinated, administered and financed.

By

DONALD D. DAUWALDER AND ASSOCIATES

Under Contract Arrangements with
the Pennsylvania State Board for Vocational Education
Contract Number DG-6, 01-16-83-4-400-310, ME No. 3

December, 1964

FOREWORD

The Administration and Financing of Vocational-Technical Education in Pennsylvania is a study of the vocational education programs currently offered and those being planned by the many school districts and counties in Pennsylvania.

Recent enabling legislation has made several new types of programs possible. Area vocational-technical school districts, technical institutes, and community colleges are being formed throughout the Commonwealth. There, however, has been no clear-cut decision or regulation to determine which types of programs should be established in the several types and levels of schools. Many questions have also arisen as to the best methods of using Federal vocational education funds to assist in the formation of new vocational-technical education programs and in providing continuing support.

A tendency has developed for each of the types of schools enabled by the 1963 General Assembly to attempt to make their programs all-inclusive. There has not been enough cooperative planning for an over-all vocational-technical education continuum to be established and maintained in the Commonwealth.

The general objectives of this study are to provide information upon which the State Board for Vocational Education can make sound decisions regarding which vocational and technical curricula should be offered in the comprehensive high schools, in the area vocational-technical schools, in the technical institutes, and in the community colleges. The study will not define specific courses which should be offered but will suggest methods of analysis and cooperation which should result in sound distribution of programs among the various levels and types of schools involved.

Upon determining the general policy of program administration and financing, each district planning to offer any type of vocational-technical education will be in a better position to determine the local studies which will be required to define the specific courses or curricula which will ultimately be offered in each of the types of educational institutions.

ACKNOWLEDGMENTS

A great volume of source material and many studies have been reviewed pertaining to vocational-technical education and to the population and economic trends which exist and which are projected for the major statistical areas in the Commonwealth. Much of the statistical information contained in this study and many of the ideas regarding the development of vocational-technical education have been borrowed from these studies. We wish to thank every research department, industrial or school organization, which has prepared material pertaining either to the analysis or the solutions of problems involved in economic forecasting and in technical and vocational educational planning. We hope that any similarity of findings will be considered as further validation of the research conducted by these groups.

We, however, specifically want to recognize the assistance given by the Committee for Vocational Education and the State Board for Vocational Education and to their consultants, Dr. George Brandon and Dr. John T. Shuman, who assisted the Committee in formulating the objectives of this survey. In addition, we want to express our appreciation to the Department of Public Instruction for the assistance and cooperation extended by staff members from their several bureaus and divisions; to the State Office and several Regional Offices of the Pennsylvania Bureau of Employment Security for statistical information provided regarding employment-unemployment trends and areas of worker shortages; to several city and county Chambers of Commerce and to the State Chamber of Commerce for their published information regarding population trends, economic trends, and the need for vocational-technical education; to the superintendents and other school personnel representing both existing and planned high school programs, area technical programs, technical institutes, and community colleges; to the representatives from several of the institutions of higher education throughout the State for their suggestions regarding the areas of cooperation which can be explored, both in the development of vocational-technical post-high school programs and the many other educational programs offered by these institutions at both the under-graduate and graduate levels; and to the several industries contacted in the various statistical areas of the State who provided employment forecasts, evaluations of current vocational-technical programs, and their needs for trained personnel.

Many professional consultants and staff members assisted in the compilation and evaluation of the materials contained in this report. We particularly want to acknowledge the work performed by Mack Stoker, Chief Investigator, and Ruth Wintner, Assistant for Research.

TABLE OF CONTENTS

Page

SECTION I, INTRODUCTION AND HISTORY 1
  Contract 5

SECTION II, EMPLOYMENT TRENDS AND JOB OPPORTUNITIES 7
  Population 7
    National Population Comparisons 8
    Comparisons of Statistical Areas in Pennsylvania 9
    Population Changes by Age Groups 11
  The Counties of Pennsylvania 45
  Studies by Counties 46
  Major Employment Groupings 59
  Employment and Unemployment 59
    Statewide Employment-Unemployment 59
    Statistical Area Employment-Unemployment 62
    Employment-Unemployment by Occupations 63
  Summary of Recommendations

SECTION III, ORGANIZATION OF THE ADMINISTRATION OF VOCATIONAL-TECHNICAL EDUCATION 65
  The State Board of Education 65
  The Superintendent of Public Instruction 66
  The Bureau of Technical and Continuing Education 67
    Agricultural Education 67
    Business Education 67
    Distributive Education 68
    Homemaking Education 68
    Trade and Industrial Education 68
    Other Services 68
    Lack of Uniformity in Field Supervision 69
    Weakness in Bureau Organization 70
    Suggested Bureau Organization 70
    The New Organization, Services and Positions 71
  Summary of Recommendations 76

SECTION IV, PRESENT PROGRAMS AND PLANNING 78
  Weakness in High School Programs and Planning 79
  Weakness in the Area Vocational-Technical School 81
  Questions About the Technical Institute 83
  Vocational-Technical Education in the Community College 86
    "Criteria for the Establishment of Community Colleges" 87
    "Guidelines for Preparing Applications for the Establishment of Community Colleges" 89
    "Standards, Rules and Regulations for Public Community Colleges in Pennsylvania" 90

Page

Developments under Act 299 92
Other Vocational-Technical Education 92
  Pennsylvania State University 93
  Private Schools 93
Summary 94

SECTION V, PROPOSED EDUCATIONAL ORGANIZATION 95
Vocational-Technical Education in the High School 95
  Occupational Preparation Courses 96
Vocational-Technical Education in the Area Technical School 97
The Technical Institute 98
The Community College 99
  Facilities 99
  Administration and Supervision 99
  Instruction 99
Vocational-Technical Education in the Commonwealth 100
  Industrial Needs for Trained Personnel 100
  Levels of Education 102
  Technical Institutes 103
  Community Colleges 104
  Four-Year Colleges 104
Summary of Recommendations 105

SECTION VI, FISCAL POLICY AND LEGISLATION 108
State and Federal Financing of Vocational Education 108
  State Participation in Vocational Education 110
  Equalization to All Types of Vocational Programs 110
Salary Requirements and Department Organization 112
The Responsibility and Authority of the State Board 113
The Education Code 114

SECTION VII, SUPERVISION, EVALUATION, AND CERTIFICATION 116
Curriculum Development 116
Research and Evaluation 117
Vocational Teacher Training and Certification 118
Counseling and Guidance 119

SECTION VIII, EDUCATIONAL SPECIFICATIONS
Necessity for Educational Planning 123
Educational Specifications and the Community Survey 124
Who Should Be Involved in Educational Planning? 125
Site and General Campus Planning 125
District Philosophy and Broad Educational Objectives 125
Financial Limitations 126
The Campus Atmosphere 126
Relationships and Traffic Patterns 126
Planning and Educational Centers 127
  Program Considerations 128
  Facility Considerations 129
  Final Planning 129

SECTION IX, IN SUMMARY 131

SECTION I

INTRODUCTION AND HISTORY

In both industry and schools of all levels it is becoming increasingly difficult to define occupational, vocational, or technical education. Historically the schools have divided their curricula into vocational, business, and academic areas. Practically, however, there is very little subject matter taught by any school which does not become vocationally-oriented and/or skill-centered education under certain circumstances. For example, a course in Ancient Greek would be vocational education for an individual preparing to be a teacher of Greek. Conversely a basic course in Electronics could be considered academic if it were required of all students as a general knowledge base.

Until the beginning of the nineteenth century the only vocational education available was in the area of apprenticeship. Schools did not participate in these programs. At the beginning of the nineteenth century the need for additional skilled personnel became evident. Therefore, many schools and political subdivisions conducted studies and recommended the establishing of occupationally-centered curricula. These surveys resulted in the establishment of mechanics institutes, polytechnic institutes, agricultural and mining colleges, engineering colleges, junior colleges, and trade and technical schools.

Currently so many different programs are available in the fields of vocational and technical education, both within the schools and within industry, that a great deal of confusion has resulted. There is little clear-cut understanding of the difference between education and training for the semi-skilled trades, skilled trades, technicians, or even for certain classifications of engineers. In fact, curricular offerings and classification plans have been developed by individual schools and industries without coordination between other groups offering the same type of training.

The size of the school, its generally expressed purpose, and its facilities have more often determined the type of education provided than has the need of the locality served. Industrial training has often followed classification plans rather than determined training needs. Both of these tendencies have resulted in an inability to determine what is meant by a school or an industry by the terms semi-skilled worker, skilled worker, or technician.

Regardless of these difficulties in establishing uniform classifications and training standards, it is evident from all surveys that the ratio of highly skilled workers to the lower level skilled groups is rapidly increasing. Within the last 10 years the ratio of technicians employed in industry has increased from approximately 1 per 1,000 to 1 per 35 employees. This ratio is continuing to change and, within the next 10 years, 1 of every 10 employes in industry will probably require technical training and knowledge.

Section I
Introduction and History

Public recognition of technical skills is increasing, and both the schools and industry are recognizing the fact that a technical course or program is not necessarily a "terminal" program. Technical education is becoming more and more a required part of a complete education, and technical training is not a program into which the schools or industry should dump the misfits who are unable to make academic progress in other courses or jobs.

The problems of educating and training our technical work force have been increased by lack of coordination and understanding between the schools and inudstry. This report will point up some of the areas wherein more cooperation is needed and will suggest methods by which understanding can be increased, particularly in the areas of academic and vocational training and education.

One of the major problems in Pennsylvania in providing adequate vocational-technical programs has been the relatively unplanned establishing of hundreds of school districts which are too small from the basis of student population for adequate educational programs of a specialized nature to be offered. The history of districting problems in Pennsylvania is summarized in the following list of significant dates:

1834--The Free Public School Act was passed. This was permissive legislation and very few results were obtained.

1854--Legislation was passed establishing the Office of County Superintendent as a quasi-administrative position. County Superintendents served as chief administrators for school districts of less than 4,000 population.

1874--Legislation was passed which mandated school redistricting. Several loopholes were left in the law which resulted in the number of districts being increased from 907 to 2,585.

1901--The first Consolidation Act was passed with very few results.

1911--The First Union District Act was passed and the first incentive payment of $200 per year for each school closed was authorized.

1921--The Second Union District Act was passed which left the formation of union districts to a vote of the people.

1937--The first Merger Act was passed. Under the 1921 Union District Act the unification had to be approved by all districts voting; under the merger act those districts voting favorably could "merge".

Section I
Introduction and History

1947--Legislation was passed which provided that the County Superintendents must submit plans for merger. This act provided incentive payments of $500 per teaching unit for jointure and $800 per teaching unit for merger. Unfortunately for the education of the children of the Commonwealth, most districts which did either voted for jointure rather than merger.

1953--A Revision of the Merger Act of 1947 was enacted. This required the County Superintendents to submit revisions of county plans. It also required that merger proposals must be placed on the ballot. However, since no time limit was stated, very few votes were taken.

1953-- During this session of the General Assembly, the first Area Vocational-Technical School Act was enacted. This resulted in the formation of several area vocational-technical districts. Five of those began operating schools before the Act was revised in 1963 (Wyoming Valley, Fayette, Lower Bucks, Forbes Trail, and Upper Bucks.)

1961--Act 561 was enacted which mandated county action for redistricting and the elimination of small districts. There was considerable local reaction to this Act on the ground that it went too far.

1963--Act 299 was enacted which amended Act 561 by changing some of the more controversial provisions. The goal of Act 299 was to reduce the number of districts from the then current 2,035 to approximately 500. Sixty-six of the State's 67 counties were required to submit proposals under the Act. As of mid-September, 1964, 65 county plans had been approved by the Bureau of School District Organization of the Department of Public Instruction. The 66th proposal had been submitted and was in the process of approval.

Nineteen hundred and sixty-three also saw the passage of Act 463, which revised provisions of the 1953 Area Vocational-Technical School Act and which enabled the formation of technical institutes in Philadelphia and Allegheny Counties.

Act 484 was also enacted in 1963. This Act provided for the establishing of community colleges.

This report is primarily concerned with these three Acts passed in 1963.

Section I
Introduction and History

Under provisions of State Act 463 amending the Act of March 10, 1949, (P.L.30) entitled "An act relating to the public school system..." which was enacted by the Pennsylvania General Assembly on August 13, 1963, responsibility for administering the vocational-technical educational programs in Pennsylvania was assigned to a newly created State Board of Education. Similar provisions in State Act 484 "providing for the creation, establishment and operation of community colleges, granting certain powers to the State Board of Education, the Council of Higher Education and the Department of Public Instruction; authorizing school districts, county boards of school directors and municipalities to sponsor community colleges; authorizing school districts and municipalities to levy certain taxes, providing for reimbursements by the Commonwealth of certain costs and expenses, and making an appropriation." was enacted by the same legislature and placed the responsibility for all of the programs to be included in community colleges under supervision of the State Board.

The 17 members of the State Board were appointed late in 1963. Seven of these members serve as the Council of Basic Education and seven as the Council of Higher Education. Three serve as Members-at-Large. In addition, committees of the Board were established to study special phases of education and to report to the entire Board at its regular monthly meetings. One such committee is the Committee for Vocational Education. Reports from this Committee are made to the entire Board in its capacity as the State Board for Vocational Education.

In view of the realignment of administrative responsibility effected by the 1963 General Assembly, as opposed to the authority and responsibility of the previously existing Commission, it became necessary for the State Board for Vocational Education to obtain a great deal of information regarding both the administration and financing of vocational-technical programs throughout the Commonwealth.

The Board for Vocational Education appointed a group of consultants to advise on how such information should be obtained and to define the major areas of study. These consultants, meeting with staff members from the Department of Public Instruction, determined that a continuing survey of vocational-technical education should be conducted within the State and that the first phase of such a study should consist of a short-term analysis of programs and problems on which the Board could make administrative decisions and legislative recommendations for the 1965 session of the General Assembly. The second phase would explore in greater detail and depth the findings and recommendations reported during the first phase.

Due to budgetary considerations and because of the need for interim recommendations to be made as rapidly as possible, the over-all survey recommended by the consultants was divided into the two phases as separate contracts. The following items were considered essential for the Board to make immediate interim recommendations and were included in the contract which provided that:

Section I
Introduction and History

"...the Survey Director shall, under the direction of the Board and an Advisory Committee to be appointed by the Board, perform the following services:

a. Obtain information necessary to assist the Board in developing an interim plan to cover the criteria and analysis necessary for the development of programs of vocational education at both the high school and post-high school levels.

b. Conduct a short-term survey of current projectable employment trends and job opportunities in the Commonwealth and to interpret such projections as they relate to the need for vocational and technical training.

c. Survey and analyze the organization, staff, and supervision of the Department of Public Instruction as they relate to coordinated administration of the various technical and vocational programs made possible under recent legislative provisions.

d. Survey the educational needs of the various counties and school districts of the Commonwealth and recommend the types and locations of area vocational-technical schools and technical institutes, which should be established.

e. Study both the existing and proposed educational programs in the Commonwealth and recommend the interrelationship and coordination of area vocational-technical schools and technical institute programs, community colleges, and all other post-secondary education within the Commonwealth.

f. Study existing plans and policies relating to the administration of funds and recommend a coordinated basis for the allocation of State and Federal funds, both for traditional vocational services and for area vocational-technical programs.

g. Recommend minimum optimum standards as guidelines for establishing and administering area vocational-technical schools and technical institutes, and community colleges.

h. Determine the type of physical facilities necessary to provide flexibility and adequate space and equipment utilization in area vocational-technical schools and technical institutes, and community colleges, including recommendations to the Board on educational specifications and standards which should be required of participating school districts.

i. Prepare recommendations to the Board on developmental proposals for the continued amplification of all phases of survey and research activities covered under this agreement.

j. Prepare interim and final reports of findings and recommendations on all the above items as required by the Board and assist in the preparation and publication of any such findings or recommendations which the Board may desire to distribute Statewide or nationally."

The contract was specified for the period August 1, 1964, through December 31, 1964, at which time the "final report" was to be submitted to the State Board for Vocational Education.

A preliminary verbal report was made to the Committee for Vocational Education at their regularly scheduled meeting in October, 1964. A summary of the complete report was submitted to the Committee at their December meeting. The following sections constitute the final report on the interim phase of the recommended over-all survey. Recommendations which may be made by the State Board of Education should include legislative considerations, administrative organization, and a determination of the additional studies and/or coordination of existing studies which will enable the Board to develop a complete continuum of vocational-technical education in Pennsylvania utilizing existing educational facilities and those which are currently being planned.

SECTION II

EMPLOYMENT TRENDS AND JOB OPPORTUNITIES

The educational needs of any geographical area can be determined only after considering many factors. Among the major factors which should influence the types and levels of vocational-technical training which should be provided in the area are: population trends, employment-unemployment ratios, migration ratios (both in and out of an area), and analyses of employment opportunities as reported by employment services and by industries in the area. This section contains many statistical tables and explanations concerning these factors in each of the 67 counties of the Commonwealth and in each of the 12 major standard statistical areas into which the State has been divided by the United States Department of Labor.

POPULATION

The economy of any area is influenced by population ratios and changes. A decrease in population or an increase of less than the national average, when considered as a single factor, may not result in a decline in the economy. It, however, is a major product of an adverse economic change or condition. Such has been the case in Pennsylvania since World War II when compared to the populations and the economies of several of the expanding industrial areas in the Nation. It will be noted in the following tabulations that some areas of Pennsylvania have increased in population at a rate equal to or higher than the national average. No statistical area in the State, however, has increased in population at the rate other expanding urbanized areas have increased.

National Population Comparisons

The following tabulation establishes a basis for national comparisons. Two of the 17 largest counties in the Nation, in terms of population, are located in Pennsylvania. It will be noted that Philadelphia County registered a population decrease of 3.34 percent and Allegheny County registered an increase of 7.48 percent between 1950 and 1960. These compare to increases in other counties ranging to as high as 93.26 percent. Only four of the largest counties showed population decreases.

Table I -- Population Comparisons by Counties.

Rank	County	1960 Population	1950 Population	% of Change
1	Los Angeles, Cal.	6,038,771	4,151,687	+ 45.45
2	Cook, Ill.	5,129,725	4,508,792	+ 13.77
3	Wayne, Mich.	2,666,297	2,435,235	+ 9.49
4	Kings, N. Y.	2,627,319	2,738,175	- 4.05
5	Philadelphia, Pa.	2,002,512	2,071,605	- 3.34
6	Queens, N. Y.	1,809,578	1,550,849	+ 16.68
7	New York, N. Y.	1,698,281	1,960,101	- 13.36
8	Cuyahoga, Ohio	1,647,895	1,389,532	+ 18.59
9	Allegheny, Pa.	1,628,587	1,515,237	+ 7.48
10	Bronx, N. Y.	1,424,815	1,451,277	- 1.82
11	Nassau, N. Y.	1,300,171	672,765	+ 93.26
12	Harris, Tex.	1,243,158	805,701	+ 54.29
13	Middlesex, Mass.	1,238,742	1,064,569	+ 16.36
14	Erie, N. Y.	1,064,688	899,238	+ 18.39
15	Milwaukee, Wis.	1,036,041	871,047	+ 18.94
16	San Diego, Cal.	1,033,011	556,808	+ 85.52
17	Dallas, Tex.	951,527	614,799	+ 54.77

Comparisons of the populations of major cities also indicate a considerable difference in Pennsylvania as compared to the national average for the 21 cities with populations of 500,000 or over. The City of Philadelphia had a population decrease of 3.34 percent and the City of Pittsburgh a population decrease of 10.71 percent from 1950 to 1960. The percentage decline for Pittsburgh was exceeded only in St. Louis and Boston. Of the other cities in this size range population increases ranged to a high of 71.43 percent in San Diego, California.

In analyzing the city population trends and relating them to the general economic indexes in these cities it is found that most of the cities with decreasing populations have declining economies and that the three cities with the greatest industrial expansion gained in population from 43.89 percent to 71.43 percent from 1950 to 1960.

Comparisons of Statistical Areas in Pennsylvania

The following tabulation shows the population and the percentage of change from 1950 to 1960 for the United States, Pennsylvania, and each of the 12 major statistical areas in the Commonwealth. A discussion of population by counties follows in a later subsection.

Section II
Employment Trends and Job Opportunities

Table 2--Comparative Population Changes

Nation, State, SMSA's	Population 1950	Population 1960	% of Change
United States	151,325,798	179,323,175	+ 18.50
Pennsylvania	10,498,012	11,319,366	+ 7.82
Allentown-Bethlehem-Easton	437,824	492,168	+ 12.41
Altoona	139,514	137,270	- 1.60
Erie	219,388	250,682	+ 9.75
Harrisburg	292,241	345,071	+ 18.07
Johnstown	291,354	280,733	- 3.64
Lancaster	234,717	278,359	+ 18.59
Philadelphia	3,671,048	4,342,897	+ 18.30
Pittsburgh	2,213,236	2,405,435	+ 8.68
Reading	255,740	275,414	+ 7.69
Scranton	257,396	234,531	- 8.88
Wilkes-Barre	392,241	346,972	- 11.54
York	202,737	238,336	+ 17.55

Many of the population increases for the Statistical Areas listed above were due to increases in suburban and rural portions of the areas in spite of decreases in the central urban areas. For example, the Philadelphia SMSA increased by 18.30 percent while the City of Philadelphia decreased by 3.34 percent. In a like manner the Pittsburgh SMSA increased by 8.68 percent while the City of Pittsburgh decreased by 10.71 percent. This shift in population ratios from urban to suburban and rural areas is an indication of the current trend for new industries to locate out of urban centers due to cost and other factors. Educational planning, especially of area schools, must consider this growing trend in population movement.

Population Changes by Age Groups

The total gross population which is reported above does not necessarily indicate the increase or decrease in general economic indexes. Gross population changes have varied materially throughout the United States between the last two census periods. Changes of population in 30 leading cities have ranged from -13 percent in Boston to +300 percent in Phoenix. The changes in leading counties have ranged from -13.6 percent in St. Louis, Missouri, to +225 percent in Orange, California. Of far more importance as an economic factor is the stability of age ratios and related employment opportunities within the population framework. Pennsylvania's population decline in some of the major statistical areas poses a far greater economic problem than exists in Boston or St. Louis even with a smaller percentage decline in over-all population. Pennsylvania is losing population in the wrong age groups. The following tabulations point up this problem.

Table 3a--Population Changes by Age Groups from 1950 - 1960.

Age Group	U. S.	Pa.	Phila. SMSA	Pgh. SMSA	Average Other Urbanized Areas
All Ages	+18.50	+ 7.82	+18.30	+ 8.68	+ 60.50
- 5	+25.01	+15.73	+37.43	+17.11	+ 80.72
5-14	+45.17	+31.47	+51.43	+35.73	+126.57
15-19	+23.88	+10.64	+24.90	+11.34	+ 88.20
20-29	- 9.16	-24.83	-13.34	-28.36	+ 21.13
30-39	+ 6.84	- 2.70	+ 6.51	- 2.72	+ 40.91
40-49	+16.22	+12.74	+17.04	+18.18	+ 45.74
50-64	+16.44	+ 7.83	+12.24	+ 7.16	+ 56.80
65 and +	+34.69	+27.25	+33.36	+32.66	+70.03
Median Age (Yrs.)	29.5	32.0	31.5	32.1	28.8

Table 3b--Population Changes by Age Groups from 1950-1960 (SMSA's).

Age Group	Allentown-Bethlehem-Easton	Altoona	Erie	Harrisburg	Johnstown
All Ages	+12.41	- 1.60	+ 9.75	+18.07	- 3.64
- 5	+19.05	- 6.45	+23.86	+24.61	- 5.94
5-14	+40.84	+16.77	+46.85	+54.77	+9.31
15-19	+15.49	+ .46	+27.70	+22.68	- 6.15
20-29	-22.54	-32.17	-25.14	-16.51	-37.70
30-39	+ 1.26	- 8.96	+ 1.84	+10.26	-14.59
40-49	+24.23	+ .77	+23.98	+20.19	+16.27
50-64	+ 7.50	+ .62	+ 6.02	+13.30	- .46
65 and +	+33.08	+21.15	+28.86	+29.74	+27.60
Median Age (Yrs.)	33.0	33.2	30.0	31.4	30.9

Table 3c--Population Changes by Age Groups from 1950-1960 (SMSA's).

Age Group	Lancaster	Reading	Scranton	Wilkes-Barre	York
All Ages	+18.59	+ 7.69	- 8.88	-11.54	+17.55
+ 5	+27.18	+12.79	- 7.29	-16.61	+25.99
5-14	+43.74	+36.33	+ 7.55	- .81	+45.27
15-19	+22.32	+ 3.67	-12.04	-17.63	+17.16
20-29	- 8.15	-23.05	-43.42	-45.48	-13.86
30-39	+12.41	- 1.77	-21.41	-25.97	+10.22
40-49	+ 2.93	+ 7.55	+ 1.82	- 2.21	+14.48
50-64	+18.02	+ 9.68	- 3.51	+ 5.76	+19.59
65 and +	+24.38	+26.81	+22.77	+27.75	+28.37
Median Age (Yrs.)	29.8	34.6	35.8	36.0	31.1

Section II
Employment Trends and Job Opportunities

The United States as a whole had a 9.16 percent decrease in population in the 20-29 age group due to decreased birth rates during the last major depression. The problem,however, is greatly magnified in most of Pennsylvania, where the loss of population in that most employable of all age groups ranges to a high of nearly five times the national average in the Wilkes-Barre SMSA. Only in the Lancaster SMSA was the decrease less than the national average. The decreases are excessive in all SMSA's except Lancaster, York, and Harrisburg. These heavy losses are not due to birth rate decreases. They are related almost entirely to the out-migration of the most employable population groups who are unable to find employment in many areas of Pennsylvania. A large percentage have also left because of the lack of post-high school education at a cost they could afford. Both of these factors are discussed in other sections of this report.

Another factor of concern to Pennsylvania is the median age of the population of 32 years. This compares unfavorably with the national median of 29.5 years and the 28.8 years average found in those cities in other states which are expanding industrially. This factor is related directly to out-migration of the 20-29 and 30-39 age groups. The extremes of median ages of 35.8 and 36.0 are found in the areas with the highest rates of out-migration, i.e. in the Scranton and Wilkes-Barre areas.

From 1950 to 1960 the State of Pennsylvania gained 821,354 in population but had a net migration loss of 475,286. Each statistical area in the State and each county should analyze the population and migration ratios applying to the area and determine through local research the extent to which educational facilities and/or general employment opportunities have influenced these population ratios.

THE COUNTIES OF PENNSYLVANIA

Migration ratios and population trends by age groups are available through the United States Bureau of Census for each of the counties in the Commonwealth. These are not reported in detail here since they would be concerned only in analysis of specific needs for a district or a county in connection with its local educational planning. It is suggested that each local school district obtain this information for study and evaluation before specific educational programs are planned.

Employment trends and general forecasting of the types of programs which should be given emphasis within the areas of the State are reported later in this section for each major statistical area.

As general descriptive information we are reporting below the following for each county:

1. The population for the last census reporting period and the percentage of increase or decrease for the two preceding decades.

2. The percentage of the county's population which is "urban" and the number of urban areas by population grouping.

3. The cities and/or areas within each county which are considered "Industrial Areas" by the Bureau of Statistics, Department of Internal Affairs of Pennsylvania.

4. The major types of industrial employment based on the highest percentage of employees engaged in various industrial operations as reported by the Department of Internal Affairs.

5. A brief summary of vocational programs available in each county which includes:

   a. The number of vocational programs offered to in-school youth in each vocational grouping except Business and Clerical which have not previously been participatable programs.

   b. The number of adult or extension vocational programs offered to adults and out-of-school youth in each participatable vocational grouping.

   c. The present status of the formation of area vocational-technical districts in each county.

   d. A statement of the number of retraining programs which have been approved and the number of out-of-school youths and adults involved as certified by the Bureau of Employment Security. This includes all programs under Section 2508.3 of the School Code, the Area Redevelopment Act, and the Manpower Development and Training Act.

Adams County

Population: The 1960 population was 51,906. This is an increase of 17.4 percent over 1950. There was a 12.1 percent increase between the years 1940 and 1950.

Urban Areas: The urban population constitutes 26.2 percent of the total population of the county. In 1960 there were 5 urban areas with populations from 2,500 to 5,000, and 1 with a population of from 5,000 to 10,000.

Industrial Areas and Employment: No portion of the county is classified as an Industrial Area. The major industries in the county are leather products; food and kindred products; miscellaneous rubber and plastics; and apparel and related products.

Vocational Education: For in-school youth there are 5 Agricultural programs and 6 in Home Economics. There are no Distributive Education or Trade and Industrial programs.

In Adult or Extension education, there are 2 Agricultural programs and 1 in Home Economics.

No Area vocational-technical district has been formed in the county.

No retraining programs have been operated in the county.

Allegheny County

Population: The 1960 population was 1,628,587. This is an increase of 7.5 percent over 1950. From 1940 to 1950 there was an increase of 7.3 percent.

Urban Areas: The urban population constitutes 93.1 percent of the total county population. In 1960 there were 28 urban areas of from 2,500 to 5,000; 35 from 5,000 to 10,000; 29 from 10,000 to 30,000; 3 from 30,000 to 50,000; 1 from 50,000 to 100,000; and 1 over 500,000.

Industrial Areas and Employment: Pittsburgh, Coraopolis, McKees Rocks, Sharpsburg, Wilkinsburg, Carnegie, and McKeesport and surrounding areas have been classed as Industrial. The major industries in the county are primary metal products; electrical machinery, equipment and supplies; research and development; fabricated metal products; and food and kindred products.

Vocational Education: For in-school youth there are 9 Distributive Education programs; 29 programs in Home Economics; and 8 Trade and Industrial programs. There is no program in Agriculture.

In Adult or Extension education there are 6 Trade and Industrial programs; 20 in Distributive Education; 48 in Home Economics; and 1 in Agriculture.

Five area vocational-technical attendance districts have been formed in the county. Three districts are currently operating programs: Forbes Trail, Steel Valley, and the City of Pittsburgh which operates in 5 schools, i.e. Connelley, Washington, Arsenal, South, and Allegheny.

Over 100 retraining courses have been approved by the Bureau of Employment Security. Currently there are 2,559 enrollees. Prior programs have enrolled an additional 2,167.

Armstrong County

Population: The 1960 population was 79,524. This represents a decrease of 1.6 percent from the 1950 figures. There had been a .3 percent decrease from 1940 to 1950.

Urban Areas: The urban population in 1960 constituted 23.2 percent of the total. There are 11 urban areas in the county, 8 with populations ranging from 2,500 to 5,000 and 3 from 5,000 to 10,000.

Industrial Areas and Employment: No portion of the county is classified as an Industrial Area. Major industries are stone, clay, and glass products; and food and kindred products.

Vocational Education: For in-school youth there are 2 programs in Agriculture and 1 in Home Economics. There are no programs in Distributive Education or Trade and Industrial.

In Adult or Extension education there is 1 program in Agriculture and 1 in Trade and Industrial. There are no programs in Distributive Education or Home Economics.

An area vocational-technical attendance district has been formed covering the entire county. It is not in operation.

There have been 3 retraining programs approved by the Bureau of Employment Security. Current enrollment is 45; prior enrollments have been an additional 42.

Beaver County

Population: The population in 1960 was 206,948. This is an increase of 18.1 percent from 1950. From 1940 to 1950 the population increased 11.8 percent.

Urban Areas: In 1960 the urban population represented 70.9 percent of the total. There were 8 areas of from 2,500 to 5,000; 12 from 5,000 to 10,000; and 4 from 10,000 to 30,000.

Industrial Areas and Employment: Beaver Falls, Aliquippa, and Ambridge and the areas surrounding the 3 are considered an Industrial Area. The major industries are primary metal products; fabricated metal products; electrical machinery, equipment, and supplies; stone, clay and glass; and chemical and allied products.

Vocational Education: For in-school youth there are 1 program in Agriculture, 4 in Distributive Education, 1 in Home Economics, and 2 in Trade and Industrial.

In Adult or Extension education there are 1 in Agriculture, 10 in Distributive Education, 3 in Home Economics, and 2 in Trade and Industrial.

No area vocational-technical district has been formed in the county.

One retraining program has been approved with a student enrollment of 49.

Bedford County

Population: The 1960 population was 42,451, an increase of 4.1 percent from 1950. There was a decrease of .1 percent from 1940 to 1950.

Urban Areas: There are 3 urban areas of from 2,500 to 5,000 in the county. Urban population constitutes 8.7 percent of the total.

Industrial Areas and Employment: No portion of the county is classified as an Industrial Area. The major industries are apparel and related products; lumber and wood products; and non-electrical machinery.

Vocational Education: For in-school youth there are 4 programs in Agriculture and 5 in Home Economics; there are none in Distributive Education or Trade and Industrial.

In Adult or Extension education there are 4 programs in Agriculture; there is none in Distributive Education, Home Economics, or Trade and Industrial.

No area vocational-technical district has been formed in the county.

One retraining program has been operated with an enrollment of 75 students.

Berks County

Population: The 1960 population was 275,414, an increase of 7.7 percent from 1950. There was an increase of 5.7 percent from 1940 to 1950.

Urban Areas: The urban population in 1960 constituted 64.3 percent of the total. There were 19 areas of from 2,500 to 5,000; 5 from 5,000 to 10,000; 1 from 10,000 to 30,000; and 1 from 50,000 to 100,000.

Industrial Areas and Employment: Reading and the area surrounding it are classified as an Industrial Area. The major industries are textile mill products; primary metal products; electrical machinery, equipment, and supplies; non-electrical machinery; apparel and related products; food and kindred products; and transportation equipment.

Vocational Education: For in-school youth there are 12 programs in Agriculture, 1 in Distributive Education, 10 in Home Economics, and 1 in Trade and Industrial.

In Adult or Extension education there are 1 program in Agriculture, 11 in Distributive Education, 6 in Home Economics, and 1 in Trade and Industrial.

An area vocational-technical district has been formed covering the entire county. It is not in operation.

There have been 6 retraining programs approved with a total student enrollment of 527.

Blair County

Population: The 1960 population was 137,270, a decrease of 1.6 percent from 1950. There had been a decrease of .6 percent from 1940 to 1950.

Urban Areas: The urban population in 1960 constituted 68.3 percent of the total. There were 5 urban areas of from 2,500 to 5,000; 3 from 5,000 to 10,000; 1 from 10,000 to 30,000; and 1 from 50,000 to 100,000.

Industrial Areas and Employment: Tyrone and Altoona and the area surrounding Altoona are classified as Industrial Areas. The major industries are paper products; leather products; food and kindred products; textile mill products; and electrical machinery, equipment, and supplies.

Vocational Education: For in-school youth there are 6 programs in Agriculture, 1 in Distributive Education, 7 in Home Economics, and 2 in Trade and Industrial.

In Adult or Extension education there are 4 in Agriculture, 2 in Distributive Education, 4 in Home Economics, and 2 in Trade and Industrial.

No area vocational-technical district has been formed in the county.

Eleven retraining programs have been approved with 145 students currently enrolled. Prior enrollment was 264 students.

Bradford County

Population: In 1960 the county population was 54,925, showing an increase of 6.2 percent from 1950. There had been a 2.2 percent increase from 1940 to 1950.

Urban Areas: The urban population in 1960 constituted 30.4 percent of the total. There were 3 urban areas of from 2,500 to 5,000 and 1 from 5,000 to 10,000.

Industrial Areas and Employment: No portion of the county is classified as an Industrial Area. The major industries are non-electrical machinery; primary metal products; and textile mill products.

Vocational Education: For in-school youth there are 7 programs in Agriculture and 7 in Home Economics. None is offered in Distributive Education or Trade and Industrial.

In Adult or Extension education there are 3 programs in Agriculture and 1 in Home Economics. None is offered in Trade and Industrial or Distributive Education.

One area vocational-technical district has been approved, covering the entire county. It is not in operation.

Eight retraining programs have been approved. There is a current enrollment of 56. The prior enrollment was 290 students.

Bucks County

Population: The 1960 population was 308,567, representing an increase of 113.4 percent from 1950. There had been an increase of 34.3 percent from 1940 to 1950.

Urban Areas: The urban population in 1960 constituted 75.2 percent of the total. There were 11 urban areas of from 2,500 to 5,000; 7 from 5,000 to 10,000; 6 from 10,000 to 30,000; and 1 from 50,000 to 100,000.

Industrial Areas and Employment: Quakertown, Perkasie, Doylestown, Morrisville, and Bristol, and the area surrounding Bristol, are classified as Industrial Areas. The major industries are primary metals; chemical and allied products; instruments; apparel and related products; and paper and allied products.

Vocational Education: For in-school youth there are 2 programs in Agriculture, 1 in Distributive Education, 1 in Home Economics, and 2 in Trade and Industrial.

In Adult or Extension education there is 1 program each in Agriculture, Distributive Education, Home Economics, and Trade and Industrial.

Three area vocational-technical attendance areas have been approved for the county, 2 of which are in operation. These are Lower Bucks and Upper Bucks.

Seven retraining programs have been approved. Current enrollment is 70 and prior enrollment was 107 students.

Butler County

Population: The 1960 population was 114,639, representing an increase of 17.8 percent from 1950. There had been an 11.1 percent increase from 1940 to 1950.

Urban Areas: The urban population constitutes 29.2 percent of the total. There are 10 urban areas of from 2,500 to 5,000 and 2 from 10,000 to 30,000.

Industrial Areas and Employment: Butler is classified as an Industrial Area. The major industries are primary metal products; transportation equipment; glass, clay, and stone products; and petroleum refining and related products.

Vocational Education: For in-school youth there are 5 programs in Agriculture, 1 in Distributive Education, 4 in Home Economics, and none in Trade and Industrial.

In Adult or Extension education there are 2 programs in Agriculture, 3 in Distributive Education, 3 in Home Economics, and 1 in Trade and Industrial.

No area vocational-technical district has been approved for the county.

Three retraining programs have been approved. Current enrollment is 72; prior enrollment was 65 students.

Cambria County

Population: The 1960 population was 203,283, showing a decrease of 3.0 percent from 1950. There had been a 1.8 percent decrease from 1940 to 1950.

Urban Areas: The urban population in 1960 was 60.5 percent of the total. There were 23 urban areas of from 2,500 to 5,000; 5 from 5,000 to 10,000; and 1 from 50,000 to 100,000.

Industrial Areas and Employment: Johnstown and the area surrounding it are classified as an Industrial Area. The major industries are primary metals; transportation equipment; apparel and related products; and food and kindred products.

Vocational Education: For in-school youth 2 programs have been offered in Agriculture, 8 in Home Economics, 1 in Trade and Industrial, and none in Distributive Education.

In Adult or Extension education there are 2 in Trade and Industrial and 1 each in Agriculture, Distributive Education, and Home Economics.

No area vocational-technical district has been approved.

Twenty-three retraining programs have been approved. There are 265 students currently enrolled. Prior enrollment was 615 students.

Cameron County

Population: The 1960 population was 7,586. There had been an 8 percent increase from 1950 to 1960 and a 2.5 percent increase from 1940 to 1950.

Urban Areas: The urban population constitutes 44.7 percent of the total. There are 2 urban areas of from 2,500 to 5,000.

Industrial Areas and Employment: No portion of the county is classified as an Industrial Area. The major industry is electrical machinery, equipment, and supplies.

Vocational Education: There are no daytime vocational programs and no adult extension programs. There has been one part-time cooperative day and evening extension Trade and Industrial program.

No area vocational-technical attendance district has been approved.

There have been no retraining programs.

Carbon County

Population: The 1960 population was 52,889. There had been an 8.1 percent population decrease from 1950 to 1960 and a 6.8 percent decrease from 1940 to 1950.

Urban Areas: The urban population constitutes 64.0 percent of the total. There are 6 urban areas of from 2,500 to 5,000 and 4 from 5,000 to 10,000.

Industrial Areas and Employment: No portion of the county is classified as an Industrial Area. The major industries are apparel and related products; primary metal products; and electrical machinery, equipment, and supplies.

Vocational Education: For in-school youth 2 programs are offered in Home Economics, There is none in Agriculture, Distributive Education, or Trade and Industrial.

In Adult or Extension education there are 2 programs in Distributive Education and 1 in Home Economics. There are none in Agriculture or Trade and Industrial.

One area vocational-technical attendance district has been approved which covers the entire county. It is not in operation.

There have been no retraining programs.

Centre County

Population: In 1960 the county population was 78,580. There was an increase of 19.2 percent from 1950. There had been a 25.3 percent increase from 1940 to 1950.

Urban Areas: The urban population constitutes 41.1 percent of the total. There are 4 urban areas of from 2,500 to 5,000; 2 from 5,000 to 10,000; and 1 from 10,000 to 30,000.

Industrial Areas and Employment: No portion of the county has been classified as an Industrial Area. The major industries are primary metal products; clay, stone, and glass products; and apparel and related products.

Vocational Education: For in-school youth there are 4 programs in Agriculture, 3 in Home Economics, and 1 in Trade and Industrial. There is none in Distributive Education.

In Adult or Extension education there are 3 programs in Agriculture, 3 in Home Economics, and 1 in Trade and Industrial. There is none in Distributive Education.

No area vocational-technical attendance district has been approved.

There have been no retraining programs.

Chester County

Population: In 1960 the county population was 210,608. This shows an increase of 32.3 percent from 1950. There had been a 17.3 percent increase from 1940 to 1950.

Urban Areas: The urban population constitutes 43.8 percent of the total. There are 13 urban areas of from 2,500 to 5,000; 7 from 5,000 to 10,000; and 4 from 10,000 to 30,000.

Industrial Areas and Employment: West Chester, Coatesville, Downingtown, and Phoenixville have been classified as Industrial Areas. The major industries are primary metal products; food and kindred products; non-electrical machinery; electrical machinery, equipment, and supplies; paper and allied products;

Vocational Education: For in-school youth there are 6 programs in Agriculture, 1 in Distributive Education, 3 in Home Economics, and 3 in Trade and Industrial.

In Adult or Extension education there are 2 programs in Agriculture, 2 in Distributive Education, 1 in Home Economics, and 2 in Trade and Industrial.

There have been 2 area vocational-technical attendance areas approved covering the county. Neither is in operation.

There have been 6 retraining programs, with a current enrollment of 20 students and a prior enrollment of 114.

Clarion County

Population: In 1960 the county population was 37,408. There had been a 2.4 percent decrease from 1950 and a .2 percent decrease from 1940 to 1950.

Urban Areas: The urban population constitutes 13.2 percent of the total. There is 1 urban area of from 2,500 to 5,000.

Industrial Areas and Employment: No portion of the county is classified as an Industrial Area. The major industry is stone, clay, and glass products.

Vocational Education: For in-school youth there are 5 programs in Agriculture and 2 in Home Economics. There are no programs in Distributive Education or Trade and Industrial.

In Adult or Extension education there are 3 programs in Agriculture, and 1 in Distributive Education. No programs are offered in Home Economics or Trade and Industrial.

One area vocational-technical attendance district has been approved which covers all of the county and includes the eastern portion of Forest County. It is not in operation.

There have been 2 retraining programs. Current enrollment is 80 students; prior enrollment was 25.

Clearfield County

Population: In 1960 the population was 81,534. There had been a decrease of 5.1 percent from 1950 and a decrease of 6.7 percent from 1940 to 1950.

Urban Areas: The urban population constitutes 28.4 percent of the total. There are 5 urban areas of 2,500 to 5,000; 3 from 5,000 to 10,000; and 1 from 10,000 to 30,000.

Industrial Areas and Employment: Dubois and Clearfield are classified as Industrial Areas. The major industries are stone, clay, and glass products; apparel and related products; and electrical machinery, equipment, and supplies.

Vocational Education: For in-school youth there are 4 programs in Agriculture, 7 in Home Economics, 2 in Trade and Industrial, and none in Distributive Education.

In Adult or Extension education there are 2 programs in Agriculture and 1 in Trade and Industrial. None is offered in Distributive Education or Home Economics.

One area vocational-technical attendance district has been approved covering the county. It is not in operation.

There have been 6 retraining programs approved and 32 students are currently enrolled. Prior enrollment was 127.

Clinton County

Population: In 1960 the population was 37,619, showing a 3 percent increase from 1950. From 1940 to 1950 there was an increase of 5.7 percent.

Urban Areas: In 1960 the urban population constituted 40 percent of the total. There is one urban area of from 2,500 to 5,000 and 1 of from 10,000 to 30,000.

Industrial Areas and Employment: Lock Haven is classified as an Industrial Area. The major industries are transportation equipment; paper and allied products; electrical machinery, equipment, and supplies; and textile mill products.

Vocational Education: For in-school youth there are 3 programs in Agriculture, 4 in Home Economics, 1 in Trade and Industrial, and none in Distributive Education.

In Adult or Extension education there are 2 programs in Agriculture and 1 in Home Economics. There is none in Trade and Industrial or Distributive Education.

No area vocational-technical attendance district has been approved.

No retraining programs have been offered.

Columbia County

Population: In 1960 the population was 53,489. There had been an increase of .1 percent from 1950 and an increase of 4.0 percent from 1940 to 1950.

Urban Areas: The urban population constitutes 45.3 percent of the total. There is 1 urban area of from 2,500 to 5,000 and there are 2 of from 10,000 to 30,000.

Industrial Areas and Employment: Berwick and Bloomsburg are classified as Industrial Areas. The major industries are textile mill products; transportation equipment; apparel and related products; and foods and kindred products.

Vocational Education: For in-school youth there are 5 programs in Agriculture, 6 in Home Economics, 1 in Trade and Industrial, and none in Distributive Education.

In Adult or Extension education there are 2 programs in Agriculture, 6 in Distributive Education, 1 in Trade and Industrial, and none in Home Economics.

One area vocational-technical attendance district has been approved which covers the county and includes Montour County. It is not in operation.

Four retraining programs have been approved and 51 students are currently enrolled. Prior enrollment was 15.

Crawford County

Population: In 1960 the population was 77,956. There had been a decrease of 1.3 percent from 1950 after an increase of 10.2 percent from 1940 to 1950.

Urban Areas: The urban area constitutes 32.1 percent of the total population. There is 1 area of 2,500 to 5,000; 2 from 5,000 to 10,000; 1 from 10,000 to 30,000.

Industrial Areas and Employment: Meadville and Titusville have been classified as Industrial Areas. The major industries are miscellaneous manufacturing industries; primary metal products; and chemical and allied products.

Vocational Education: For in-school youth there are 6 programs in Agriculture, 7 in Home Economics, 1 in Trade and Industrial, and none in Distributive Education.

In Adult or Extension education there is one program in Agriculture and 1 in Trade and Industrial. None is offered in Home Economics or Distributive Education.

One countywide area vocational-technical attendance district has been approved but is not in operation.

Three retraining programs have been approved. The present enrollment is 23; prior enrollment was 199 students.

Cumberland County

Population: In 1960 the population was 124,816. There had been an increase of 32.1 percent from 1950 and an increase of 26.3 percent from 1940 to 1950.

Urban Areas: The urban population constitutes 59.0 percent of the total. There are 4 urban areas of from 2,500 to 5,000; 8 from 5,000 to 10,000, and 2 from 10,000 to 30,000.

Industrial Areas and Employment: Carlisle has been classified an Industrial City. An Industrial Area extends into the county from the Harrisburg-Steelton area. The major industries are food and kindred products; textile mill products; electrical machinery, equipment, and supplies, fabricated metal products, and related products.

Vocational Education: For in-school youth there are 5 programs in Agriculture, 6 in Home Economics, 1 in Trade and Industrial, and none in Distributive Education.

In Adult or Extension education there are 5 programs in Agriculture, 1 in Distributive Education, 5 in Home Economics, and 1 in Trade and Industrial.

One area vocational-technical attendance district has been approved which covers the county and includes Perry County. It is not in operation.

There are no retraining programs.

Dauphin County

Population: In 1960 the population was 220,255. There had been an increase of 11.4 percent from 1950 and an 11.5 percent increase from 1940 to 1950.

Urban Areas: The urban population constitutes 76.8 percent of the total. There are 10 areas of from 2,500 to 5,000; 1 from 5,000 to 10,000, 6 from 10,000 to 30,000, and 1 from 50,000 to 100,000.

Industrial Areas and Employment: Harrisburg and Steelton have been classified as Industrial Areas. The major industries are food and kindred products; primary metal products; apparel and related products; fabricated metal products; leather and leather products; printing, publishing, and allied industries; transportation equipment.

Vocational Education: For in-school youth there are 5 programs in Agriculture, 1 in Distributive Education, 5 in Home Economics, and 3 in Trade and Industrial.

In Adult or Extension education there are 3 programs in Agriculture, 4 in Distributive Education, 4 in Home Economics, and 3 in Trade and Industrial.

One area vocational-technical attendance district covering the county has been approved but is not operating.

Five retraining programs have been approved. Present enrollment is 67; prior enrollment was 53.

Delaware County

Population: In 1960 the population was 553,154. There had been a 33.5 percent increase from 1950 and a 33.3 percent increase from 1940 to 1950.

Urban Areas: The urban population constitutes 95.9 percent of the total. There are 10 urban areas of from 2,500 to 5,000; 13 from 5,000 to 10,000; 11 from 10,000 to 30,000; 1 from 30,000 to 50,000; and 3 from 50,000 to 100,000.

Industrial Areas and Employment: Chester and the area surrounding Chester extending from Philadelphia constitute an Industrial Area. The major industries are transportation equipment; non-electrical machinery; petroleum refining and related industries; paper and allied products; printing and publishing; textile mill products; and primary metal products.

Vocational Education: For in-school youth there are 7 programs in Distributive Education, 5 in Home Economics, 3 in Trade and Industrial, and none in Agriculture.

In Adult or Extension education there are 2 programs in Distributive Education, 2 in Home Economics, 2 in Trade and Industrial, and none in Agriculture.

Three area vocational-technical attendance districts have been approved covering the county. None is in operation.

There have been 14 retraining programs approved. The current enrollment is 152; prior enrollment was 506.

Elk County

Population: In 1960 the population was 37,328. There had been an increase of 8.2 percent from 1950 and an increase of .2 percent from 1940 to 1950.

Urban Areas: The urban population constitutes 52.0 percent of the total. There are 2 urban areas of from 2,500 to 5,000 and 3 from 5,000 to 10,000.

Industrial Areas and Employment: St. Marys have been classified as an Industrial Area. The major industries are electrical machinery, equipment, and supplies; paper and allied products; and primary metal products.

Vocational Education: For in-school youth there are 2 programs in Home Economics. There is none in Agriculture, Distributive Education, or Trade and Industrial.

There are no Adult or Extension education programs.

No area vocational-technical attendance district has been approved.

There have been no retraining programs.

Erie County

Population: In 1960 the population was 250,682. There had been an increase of 14.3 percent from 1950 and an increase of 21.3 percent from 1940 to 1950.

Urban Areas: The urban population constitutes 77 percent of the total. There are 8 urban areas of from 2,500 to 5,000; 1 from 5,000 to 10,000; 2 from 10,000 to 30,000; and 1 from 100,000 to 500,000.

Industrial Areas and Employment: Erie and Corry, and the industrial area surrounding Erie, have been classified as an Industrial Area. The major industries are fabricated metal products; non-electrical machinery; electrical machinery, equipment, and supplies; transportation equipment; primary metal products; rubber and miscellaneous plastics products; and paper and allied products.

Vocational Education: For in-school youth there are 8 programs in Agriculture, 1 in Distributive Education, 11 in Home Economics, and 1 in Trade and Industrial.

In Adult or Extension education there are 3 programs in Agriculture, 13 in Distributive Education, 4 in Home Economics, and 1 in Trade and Industrial.

One area vocational-technical attendance district has been approved which covers the entire county. It is not in operation.

Nine retraining programs have been approved. Current enrollment is 41; prior enrollment was 726.

Fayette County

Population: In 1960 the population was 169,340. There had been a decrease of 10.8 percent from 1950 and a 5.5 percent decrease from 1940 to 1950.

Urban Areas: The urban population constitutes 30.0 percent of the total. There are 8 urban areas of from 2,500 to 5,000; 8 from 5,000 to 10,000; and 4 from 10,000 to 30,000.

Industrial Areas and Employment: Connellsville and Uniontown have been classified as Industrial Areas. The major industries are stone, clay, and glass products; fabricated metal products; apparel and related products; lumber and wood products; and food and kindred products.

Vocational Education: For in-school youth there are 5 programs in Agriculture, 1 in Distributive Education, none in Home Economics, and 1 in Trade and Industrial.

In Adult or Extension education there are 3 programs in Agriculture, 3 in Distributive Education, 1 in Home Economics, and 1 in Trade and Industrial.

One area vocational-technical district has been approved covering the southern portion of the county. This school is in operation. No attendance area has been approved for the northern portion of the county.

Eleven retraining programs have been approved. Current enrollment is 365; prior enrollment was 350.

Forest County

Population: In 1960 the population was 4,485. There had been a 9.3 percent decrease from 1950 and a 14.6 percent decrease from 1940 to 1950.

Urban Areas: No area of the county has been classified as urban.

Industrial Areas and Employment: No portion of the county has been classified as an Industrial Area. The major industries are stone, clay, and glass products; rubber and miscellaneous plastics products; and lumber and wood products.

Vocational Education: For in-school youth there are 2 programs in Home Economics and 1 in Agriculture. There is none in Distributive Education or Trade and Industrial.

In Adult or Extension education there are no programs.

The entire county is covered by 2 area vocational-technical attendance districts. The eastern half of the county is combined with Clarion County and the western half with Venango County. Neither of these districts is operating a school.

No retraining programs have been approved.

Franklin County

Population: In 1960 the population was 88,172. There had been an increase of 16.1 percent from 1950 and an increase of 9.4 percent from 1940 to 1950.

Urban Areas: The urban population constitutes 36.4 percent of the total. There are 6 urban areas of from 2,500 to 5,000; 5 from 5,000 to 10,000; and 2 from 10,000 to 30,000.

Industrial Areas and Employment: Chambersburg and Waynesboro have been classified as Industrial Areas. The major industries are non-electrical machinery; apparel and related products; and food and kindred products.

Vocational Education: For in-school youth there are 6 programs in Agriculture, 5 in Home Economics, 1 in Trade and Industrial, and none in Distributive Education, Trade and Industrial, and Home Economics.

In Adult or Extension education there are 3 programs in Agriculture, and 1 each in Distributive Education, Trade and Industrial, and Home Economics.

One area vocational-technical attendance district has been approved which covers the entire county. It is not in operation.

One retraining program has been approved which enrolled 15 students.

Fulton County

Population: In 1960 the population was 10,597. There had been a 2.0 percent increase from 1950 after a 2.7 percent decrease from 1940 to 1950.

Urban Areas: No area of the county has been classified as urban.

Industrial Areas and Employment: No portion of the county has been classified as an Industrial Area. The major industry is apparel and related products.

Vocational Education: For in-school youth there are 3 programs in Agriculture and 3 in Home Economics. There is none in Distributive Education or Trade and Industrial.

In Adult or Extension education there are 2 programs in Agriculture and 1 in Home Economics. There is none in Distributive Education or Trade and Industrial.

No area vocational-technical attendance district has been approved.

There are no retraining programs.

Greene County

Population: In 1960 the population was 39,424. There had been a decrease of 13.2 percent from 1950 and an increase of 1.6 percent from 1940 to 1950.

Urban Areas: The urban population constitutes 13.1 percent of the total. There are 4 areas of from 2,500 to 5,000 and 2 from 5,000 to 10,000.

Industrial Areas and Employment: No portion of the county has been classified as an Industrial Area. The major industries are apparel and related products; and food and kindred products.

Vocational Education: For in-school youth there are 3 programs in Agriculture and 5 in Home Economics. There is none in Distributive Education or Trade and Industrial.

In Adult or Extension education there is 1 each in Agriculture and Trade and Industrial. There is none in Home Economics or Distributive Education.

One area vocational-technical attendance district has been approved for the county. It is not in operation.

There are no retraining programs.

Huntingdon County

Population: In 1960 the population was 39,457. There had been a decrease of 3.5 percent from 1950 and a decrease of 2.3 percent from 1940 to 1950.

Urban Areas: The urban population constitutes 28.7 percent of the total. There are 2 urban areas of from 2,500 to 5,000 and 1 from 5,000 to 10,000.

Industrial Areas and Employment: Huntingdon has been classified as an Industrial Area. The major industries are stone, clay, and glass products; and apparel and related products.

Vocational Education: For in-school youth there are 4 programs in Agriculture and 4 in Home Economics. There is none in Distributive Education or Trade and Industrial.

In Adult or Extension education there are 3 programs in Agriculture and 1 in Home Economics. There is none in Distributive Education or Trade and Industrial.

No area vocational-technical attendance district has been approved.

Two retraining programs were approved which enrolled 110 students.

Indiana County

Population: In 1960 the population was 75,366. There had been a decrease of 2.3 percent from 1950 and a 3.4 percent decrease from 1940 to 1950.

Urban Areas: The urban population constitutes 23.7 percent of the total. There are 4 areas of from 2,500 to 5,000; 2 from 5,000 to 10,000; and 1 from 10,000 to 30,000.

Industrial Areas and Employment: No portion of the county has been classified as an Industrial Area. The major industries are apparel and related products; non-electrical machinery; and professional, scientific, and controlled instruments.

Vocational Education: For in-school youth there are 9 programs in Agriculture, and 6 in Home Economics. There is none in Distributive Education or Trade and Industrial.

In Adult or Extension education there are 5 programs in Agriculture, 2 in Distributive Education, 2 in Home Economics, and 2 in Trade and Industrial.

One area vocational-technical attendance district, covering the county, has been approved but is not operating.

One retraining program has been approved in which 45 students are enrolled.

Jefferson County

Population: In 1960 the population was 46,792. There had been a decrease of 4.8 percent from 1950 and a decrease of 9.1 percent from 1940 to 1950.

Urban Areas: The urban population constitutes 40.9 percent of the total. There are 3 urban areas of from 2,500 to 5,000 and 1 from 5,000 to 10,000.

Industrial Areas and Employment: Punxsutawney has been classified as an Industrial Area. The major industries are stone, clay, and glass products; and electrical machinery, equipment, and supplies.

Vocational Education: For in-school youth there are 4 programs in Agriculture, 4 in Home Economics, 1 in Trade and Industrial, and none in Distributive Education.

In Adult or Extension education there are 2 programs in Agriculture, 3 in Home Economics, 1 in Trade and Industrial, and none in Distributive Education.

No area vocational-technical attendance district has been approved.

Two retraining programs have been approved. Current enrollment is 100; prior enrollment was 110.

Juniata County

Population: In 1960 the population was 15,874. There had been an increase of 4.1 percent from 1950 and a decrease of .8 percent from 1940 to 1950.

Urban Areas: There is no portion of the county classified as urban.

Industrial Areas and Employment: No portion of the county is classified as an Industrial Area. The major industries are apparal and related products; furniture and fixtures; and food and kindred products.

Vocational Education: For in-school youth there are 3 programs in Agriculture and 2 in Home Economics. There is none in Distributive Education or Trade and Industrial.

In Adult or Extension education there is 1 program in Agriculture.

One area vocational-technical attendance district which covers the entire county and includes Mifflin County has been approved but is not in operation.

No retraining programs have been approved.

Lackawanna County

Population: In 1960 the population was 234,531, representing an 8.9 percent decrease from 1950. There had been a 14.6 percent decrease from 1940.to 1950.

Urban Areas: The urban population is 89.8 percent of the total. There are 6 urban areas of from 2,500 to 5,000; 7 from 5,000 to 10,000; 2 from 10,000 to 30,000; and 1 from 100,000 to 500,000.

Industrial Areas and Employment: Carbondale, Dunmore, and Scranton, and the areas surrounding Dunmore and Scranton, have been classified as Industrial Areas. The major industries are apparel and related products; electrical machinery, equipment, and supplies; textile mill products; printing and publishing; and food and kindred products.

Vocational Education: For in-school youth there are 2 programs in Agriculture, 14 in Home Economics, 1 in Trade and Industrial, and none in Distributive Education.

In Adult or Extension education there are 4 programs in Home Economics, 1 in Agriculture, 1 in Trade and Industrial, and none in Distributive Education.

One area vocational-technical attendance district covering the county has been approved. It is not operating.

Eight retraining programs have been offered. Current enrollment is 140; prior enrollment was 299 students.

Lancaster County

Population: In 1960 the population was 278,359, showing an increase of 18.6 percent from 1950. From 1940 to 1950 the population increased 10.5 percent.

Urban Areas: The urban population constitutes 49.5 percent of the total. There are 21 urban areas of from 2,500 to 5,000; 8 from 5,000 to 10,000; 3 from 10,000 to 30,000; and 1 from 50,000 to 100,000.

Industrial Areas and Employment: Elizabethtown, Columbia, Lititz, Ephrata, Lancaster, and the area surrounding Lancaster, have been designated Industrial Areas. The major industries are apparel and related products; fabricated metal products; electrical machinery, equipment, and supplies; non-electrical machinery; food and kindred products; miscellaneous manufacturing industries; and leather and leather products.

Vocational Education: For in-school youth there are 10 programs in Agriculture, 1 in Distributive Education, 6 in Home Economics, and 1 in Trade and Industrial.

In Adult or Extension education there are 5 programs in Agriculture, 3 in Distributive Education, 1 in Home Economics, and 1 in Trade and Industrial.

Two area vocational-technical attendance districts have been approved covering the entire county. Neither is operating.

One retraining program has been approved. Current enrollment is 106 students.

Lawrence County

Population: In 1960 the population was 112,965, showing an increase of 7.5 percent from 1950. There had been an 8.5 percent increase from 1940 to 1950.

Urban Areas: The urban population constitutes 52.5 percent of the total. There are 4 urban areas of from 2,500 to 5,000; 3 from 5,000 to 10,000; 1 from 10,000 to 30,000; and 1 from 30,000 to 50,000.

Industrial Areas and Employment: Ellwood City and New Castle, and the area surrounding New Castle, have been classified as Industrial Areas. The major industries are non-electrical machinery; stone, clay, and glass products; primary metal products; and fabricated metal products.

Vocational Education: For in-school youth there are 4 programs in Agriculture, 1 in Distributive Education, 4 in Home Economics, and 1 in Trade and Industrial.

In Adult or Extension education there are 2 programs in Agriculture, 2 in Distributive Education, 7 in Home Economics, and 1 in Trade and Industrial.

One area vocational-technical attendance district covering the county has been approved. It is not operating.

Five retraining programs have been approved. The current enrollment is 118; prior enrollment was 45 students.

Lebanon County

Population: In 1960 the population was 90,853, showing an increase of 11.2 percent from 1950. There had been a 12.4 percent increase from 1940 to 1950.

Urban Areas: The urban population constitutes 49.0 percent of the total. There are 7 urban areas of from 2,500 to 5,000; 2 from 5,000 to 10,000; and 1 from 30,000 to 50,000.

Industrial Areas and Employment: Lebanon has been classified as an Industrial Area. The major industries are apparel and related products; fabricated metal products; primary metal products; food and kindred products; textile mill products; and leather products.

Vocational Education: For in-school youth there are 4 programs in Agriculture, 4 in Home Economics, 1 in Trade and Industrial, and none in Distributive Education.

In Adult or Extension education there are 2 programs in Agriculture, 3 in Home Economics, 1 in Trade and Industrial, and none in Distributive Education.

One area vocational-technical attendance district has been approved. It is not operating.

No retraining programs have been approved.

Lehigh County

Population: In 1960 the population was 227,536, representing an increase of 14.8 percent from 1950. There had been an 11.6 percent increase from 1940 to 1950.

Urban Areas: The urban population constitutes 79.4 percent of the total. There are 6 urban areas of from 2,500 to 5,000; 5 from 5,000 to 10,000; 4 from 10,000 to 30,000; and 1 from 100,000 to 500,000.

Industrial Areas and Employment: Allentown and its surroundings have been designated an Industrial Area. The major industries are apparel and related products; electrical machinery, equipment, and supplies; textile mill products; transportation equipment; food and kindred products; and non-electrical machinery.

Vocational Education: For in-school youth there are 2 programs in Agriculture, 2 in Distributive Education, 2 in Home Economics, and 1 in Trade and Industrial.

In Adult or Extension education there are 1 program in Agriculture, 2 in Distributive Education, 4 in Home Economics, and 1 in Trade and Industrial.

One area vocational-technical attendance district has been approved for the county. It is not operating.

Eight retraining programs have been approved. Current enrollment is 140; prior enrollment was 286 students.

Luzerne County

Population: In 1960 the population was 346,972. There had been a decrease of 11.5 percent from 1950 and a decrease of 11.2 percent from 1940 to 1950.

Urban Areas: The urban population constitutes 81.1 percent of the total. There are 17 urban areas of from 2,500 to 5,000; 11 from 5,000 to 10,000; 6 from 10,000 to 30,000; 1 from 30,000 to 50,000; and 1 from 50,000 to 100,000.

Industrial Areas and Employment: West Pittston, Pittston, Kingston, Nanticoke, Wilkes-Barre, and their surrounding areas, have been classified as Industrial Areas. The major industries are apparel and related products; leather and leather products; food and kindred products; textile mill products; and tobacco products.

Vocational Education: For in-school youth there are 3 programs in Agriculture, 1 in Distributive Education, 11 in Home Economics, and 4 in Trade and Industrial.

In Adult or Extension education there are 7 programs in Distributive Education, 6 in Home Economics, 2 in Trade and Industrial, and none in Agriculture.

An area vocational-technical attendance district has been operating as the Wyoming Valley School covering part of the county. The remainder of the county has been approved but no programs are operating.

Twenty-seven retraining programs have been approved. The current enrollment is 501; prior enrollment was 1,214.

Lycoming County

Population: In 1960 the population was 109,367, representing an increase of 8.0 percent from 1950. There had been an 8.1 percent increase from 1940 to 1950.

Urban Areas: The urban population represents 60.5 percent of the total. There are 2 urban areas of from 2,500 to 5,000; 4 from 5,000 to 10,000; and 1 from 30,000 to 50,000.

Industrial Areas and Employment: Williamsport has been designated an Industrial Area. The major industries are fabricated metal products; apparel and related products; textile mill products; and transportation equipment.

Vocational Education: For in-school youth there are 5 programs in Agriculture, 1 in Distributive Education, 6 in Home Economics, and 1 in Trade and Industrial.

In Adult or Extension education there are 3 programs in Agriculture, 2 in Distributive Education, 2 in Home Economics, and 1 in Trade and Industrial.

No area vocational-technical attendance district has been approved.

Seven retraining programs have been approved. Current enrollment is 20; prior enrollment was 126 students.

McKean County

Population: In 1960 the population was 54,517, showing a decrease of 3.7 percent from 1950. There had been a decrease of .1 percent from 1940 to 1950.

Urban Areas: The urban population represents 42.5 percent of the total. There are 2 urban areas of from 2,500 to 5,000; 3 from 5,000 to 10,000; and 1 from 10,000 to 30,000.

Industrial Areas and Employment: Bradford has been designated an Industrial Area. The major industries are fabricated metal products; stone, clay, and glass products; and furniture and fixtures.

Vocational Education: For in-school youth there are 2 programs in Agriculture, 4 in Home Economics, 1 in Trade and Industrial, and none in Distributive Education.

In Adult or Extension education there are 3 programs in Home Economics, 1 in Trade and Industrial, and none in either Agriculture or Distributive Education.

No area vocational-technical attendance district has been approved.

One retraining program was approved and enrolled 25 students.

Mercer County

Population: In 1960 the population was 127,519, showing an increase of 13.9 percent from 1950. There had been an increase of 10.8 percent from 1940 to 1950.

Urban Areas: The urban population constitutes 53.7 percent of the total. There are 7 urban areas of from 2,500 to 5,000; 3 from 5,000 to 10,000; and 3 from 10,000 to 30,000.

Industrial Areas and Employment: Sharon, Farrell, Greenville, Grove City, and the areas surrounding Sharon and Farrell have been designated as Industrial Areas. The major industries are primary metal products; electrical machinery, equipment, and supplies; non-electrical machinery; and fabricated metal products.

Vocational Education: For in-school youth there are 7 programs in Agriculture, 4 in Home Economics, and none in either Distributive Education or Trade and Industrial.

In Adult or Extension education there are 4 programs in Agriculture, 11 in Distributive Education, 3 in Home Economics, and 1 in Trade and Industrial.

One countywide area vocational-technical attendance district has been approved. It is not operating.

One retraining program enrolled 23 students.

Mifflin County

Population: In 1960 the population was 44,348. There had been an increase of 1.5 from 1950 and a 1.6 increase from 1940 to 1950.

Urban Areas: The urban area constitutes 34.7 percent of the total population. There are 5 areas of from 2,500 to 5,000; 1 from 5,000 to 10,000; and 1 from 10,000 to 30,000.

Industrial Areas and Employment: Lewistown has been designated an Industrial Area. The major industries are chemical and allied products; and primary metal products.

Vocational Education: For in-school youth there are 2 programs in Agriculture, 2 in Home Economics, 1 in Trade and Industrial, and none in Distributive Education.

In Adult or Extension education there are 1 program in Agriculture, 1 in Trade and Industrial, and none in Distributive Education or Home Economics.

One area vocational-technical attendance district covering the entire county and including Juniata County has been approved but is not operating.

One retraining program has a current enrollment of 96 students.

Monroe County

Population: In 1960 the population was 39,567, representing an increase of 17.2 percent from 1950. There had been a 13.3 percent increase from 1940 to 1950.

Urban Areas: The urban population is 34.7 percent of the total. There are 3 urban areas of from 5,000 to 10,000.

Industrial Areas and Employment: Stroudsburg and East Stroudsburg have been designated as Industrial Areas. The major industries are apparel and related products; fabricated metal products; miscellaneous manufacturing industries; and printing and publishing.

Vocational Education: For in-school youth there are 1 program in Agriculture, 4 in Home Economics, and none in either Distributive Education or Trade and Industrial.

In Adult or Extension education there are 1 program in Distributive Education, 1 in Home Economics, and none in Agriculture or Trade and Industrial.

No area vocational-technical attendance district has been approved.

One retraining program enrolled 15 students.

Montgomery County

Population: In 1960 the population was 516,682, showing an increase of 46.3 percent from 1950. There had been an increase of 22.1 percent from 1940 to 1950.

Urban Areas: The urban population represents 79.4 percent of the total. There are 15 areas of from 2,500 to 5,000; 14 from 5,000 to 10,000; 8 from 10,000 to 30,000; 2 from 30,000 to 50,000; and 2 from 50,000 to 100,000.

Industrial Areas and Employment: Pottstown, Lansdale, Hatboro, Norristown, Conshohocken, and the surroundings of Norristown and Conshohocken have been designated Industrial Areas. The major industries are fabricated metal products; electrical machinery, equipment and supplies; non-electrical machinery; primary metal products; and rubber and miscellaneous plastics products.

Vocational Education: For in-school youth there are 3 programs in Agriculture, 1 in Distributive Education, 5 in Home Economics, and 3 in Trade and Industrial.

In Adult or Extension education there are 1 program in Agriculture, 14 in Distributive Education, 1 in Home Economics, and 1 in Trade and Industrial.

One area vocational-technical attendance district has been approved for the county. It is not operating.

Twelve retraining programs have been approved. Present enrollment is 165; prior enrollment was 129 students.

Montour County

Population: In 1960 the population was 16,730. There had been an increase of 4.6 percent from 1950 and of 3.5 percent from 1940 to 1950.

Urban Areas: The urban population constitutes 41.4 percent of the total. There is 1 urban area of from 2,500 to 5,000 and 1 of from 5,000 to 10,000.

Industrial Areas and Employment: No portion of the county has been designated as an Industrial Area. The major industries are transportation equipment; ordinance and assessories; and textile mill products.

Vocational Education: For in-school youth there are 1 program each in Agriculture and Home Economics and none in Distributive Education or Trade and Industrial.

In Adult or Extension education there is a program in Agriculture. No programs are offered in Distributive Education, Home Economics, or Trade and Industrial.

One area vocational-technical attendance district has been approved for the entire county and includes Columbia County. It is not operating.

One retraining program currently enrolls 15 students.

Northampton County

Population: In 1960 the population was 201,412, showing an increase of 8.7 percent from 1950. There had been a 9.6 percent increase from 1940 to 1950.

Urban Areas: The urban population constitutes 68.6 percent of the total. There are 11 urban areas of from 2,500 to 5,000; 8 from 5,000 to 10,000; 1 from 30,000 to 50,000; and 1 from 50,000 to 100,000.

Industrial Areas and Employment: Bangor, Easton, Northampton, and Bethlehem, and the area surrounding Bethlehem and extending to Allentown, have been designated Industrial Areas. The major industries are primary metal products; apparel and related products; stone, clay, and glass products; and textile mill products.

Vocational Education: For in-school youth there are 2 programs in Agriculture, 2 in Distributive Education, 7 in Home Economics, and 1 in Trade and Industrial.

In Adult or Extension education there are 7 programs in Distributive Education, 4 in Home Economics, 1 in Trade and Industrial, and none in Agriculture.

No area vocational-technical attendance district has been approved.

Four retraining programs had enrolled 106 students.

Northumberland County

Population: In 1960 the population was 104,138. There had been an 11.1 percent decrease from 1950. From 1940 to 1950 there had been a 7.7 percent decrease.

Urban Areas: The urban population constitutes 62.0 percent of the total. There are 5 urban areas of from 2,500 to 5,000; 2 from 5,000 to 10,000; and 4 from 10,000 to 30,000.

Industrial Areas and Employment: Milton, Sunbury, Shamokin, and Mt. Carmel have been designated Industrial Areas. The major industries are apparel and and related products; food and kindred products; and chemical and allied products.

Vocational Education: For in-school youth there are 4 programs in Agriculture, 7 in Home Economics, 5 in Trade and Industrial, and none in Distributive Education.

In Adult or Extension education there are 3 programs in Agriculture, 5 in Distributive Education, 2 in Trade and Industrial, and none in Home Economics.

An area vocational-technical attendance district has been approved and is operating as the Northumberland School covering the southern part of the county. The northern part of the county is combined with Snyder and Union Counties in an approved district which is not operating.

Ten retraining programs have been approved. Current enrollment is 185; prior enrollment was 129 students.

Perry County

Population: In 1960 the population was 26,582, showing an increase of 7.3 percent from 1950. There had been an increase of 6.8 percent from 1940 to 1950.

Urban Areas: The urban population constitutes 9.7 percent of the total. There is 1 urban area of from 2,500 to 5,000.

Industrial Areas and Employment: No portion of the county has been designated an Industrial Area. The major industries are apparel and related products; food and kindred products; and lumber and wood products.

Vocational Education: For in-school youth there are 2 programs in Agriculture, 5 in Home Economics, and none in either Distributive Education or Trade and Industrial.

In Adult or Extension education there is one program each in Agriculture and Home Economics. No programs are offered in Trade and Industrial or Distributive Education.

One area vocational-technical attendance district covering the entire county and including Cumberland County has been approved but is not operating.

One retraining program had enrolled 90 students.

Philadelphia County

Population: In 1960 the population was 2,002,512, showing a decrease of 3.3 percent from 1950. There had been an increase of 7.3 percent from 1940 to 1950.

Urban Areas: One hundred percent of the population has been classified as urban. There is one area of over 500,000.

Industrial Areas and Employment: The City of Philadelphia and its surroundings have been designated an Industrial Area. The major industries are apparel and related products; food and kindred products; publishing and printing; electrical machinery, equipment, and supplies; textile mill products; and non-electrical machinery.

Vocational Education: For in-school youth there are 1 program in Agriculture, 19 in Distributive Education, 2 in Home Economics, and 20 in Trade and Industrial.

In Adult or Extension education there are 14 programs in Distributive Education, 58 in Home Economics, 17 in Trade and Industrial, and none in Agriculture.

One area vocational-technical attendance district has been approved for the entire county. Three area vocational-technical schools are currently operating: Mastbaum, Bok, and Dobbins.

Seventy-three retraining programs have been approved. The current enrollment is 1,492; the prior enrollment was 3,735.

Pike County

Population: In 1960 the population was 9,158. There had been an 8.7 percent increase from 1950 and a 13.1 percent increase from 1940 to 1950.

Urban Areas: No portion of this county has been classified as urban.

Industrial Areas and Employment: No portion of this county has been classified as an Industrial Area. The major industry is apparel and related products.

Vocational Education: There are no programs for in-school youth.

There are no programs in Adult or Extension education.

No area vocational-technical attendance district has been established.

No retraining programs have been offered.

Potter County

Population: In 1960 the population was 16,483. There had been a decrease of 1.9 percent from 1950 and a decrease of 7.6 percent from 1940 to 1950.

Urban Areas: The urban population constitutes 17.5 percent of the total. There is one urban area of from 2,500 to 5,000.

Industrial Areas and Employment: No portion of the county has been classified as an Industrial Area. The major industries are electrical machinery, equipment, and supplies; lumber and wood products; and leather and leather products.

Vocational Education: For in-school youth there are 3 programs in Agriculture and 4 in Home Economics. None is offered in Distributive Education or Trade and Industrial.

In Adult or Extension education there are 2 programs in Agriculture and 1 in Home Economics. None is available in Distributive Education or Trade and Industrial.

No area vocational-technical attendance district has been approved.

No retraining programs have been approved.

Schuylkill County

Population: The population in 1960 was 173,027, showing a decrease of 13.7 percent from 1950. There had been a 12.2 percent decrease from 1940 to 1950.

Urban Areas: The urban population constitutes 54.0 percent of the total. There are 11 areas of 2,500 to 5,000; 6 from 5,000 to 10,000; and 3 from 10,000 to 30,000.

Industrial Areas and Employment: Pottsville, Mahanoy City, and Shenandoah have been classified as Industrial Areas. The major industries are apparel and related products; textile mill products; food and kindred products; and chemical and allied products.

Vocational Education: For in-school youth there are 3 programs in Agriculture, 1 in Distributive Education, 8 in Home Economics, and 2 in Trade and Industrial.

In Adult or Extension education there are 1 program in Agriculture, 9 in Distributive Education, 8 in Home Economics, and 1 in Trade and Industrial.

There have been 2 area vocational-technical attendance districts approved covering the entire county. Neither is operating.

There have been 10 retraining programs approved. Current enrollment is 120; prior enrollment was 337 students.

Snyder County

Population: In 1960 the population was 25,922, showing an increase of 13.1 percent from 1950. There had been a 13.4 percent increase from 1940 to 1950.

Urban Areas: The urban population represents 15.2 percent of the total. There are 2 urban areas of from 2,500 to 5,000.

Industrial Areas and Employment: No portion of the county has been classified as an Industrial Area. The major industries are apparel and related products; textile mill products; and furniture and fixtures.

Vocational Education: For in-school youth there are 3 programs in Agriculture, 2 in Home Economics, and none in Trade and Industrial or Distributive Education.

In Adult or Extension education there are 3 programs in Agriculture. No programs are offered in Trade and Industrial, Distributive Education, or Home Economics.

One area vocational-technical attendance district has been approved, including the entire county and including Union County and the northern portion of Northumberland County. The district is not in operation.

There have been no retraining programs approved.

Somerset County

Population: In 1960 the population was 77,450. There had been a decrease of 5.3 percent from 1950 and of 3.7 percent from 1940 to 1950.

Urban Areas: The urban population constitutes 20.9 percent of the total. There are 4 urban areas of 2,500 to 5,000 and 4 from 5,000 to 10,000.

Industrial Areas and Employment: No portion of the county has been classified as an Industrial Area. The major industries are apparel and related products; food and kindred products; and lumber and wood products.

Vocational Education: For in-school youth there are 8 programs in Agriculture, 10 in Home Economics, 1 in Trade and Industrial, and none in Distributive Education.

In Adult or Extension education there are 5 programs in Agriculture, 1 in Distributive Education, 2 in Home Economics, and 2 in Trade and Industrial.

One area vocational-technical attendance district covering the county has been approved but is not operating.

Five retraining programs were approved and enrolled 121 students.

Sullivan County

Population: In 1960 the population was 6,251. There had been a decrease of 7.3 percent from 1950 and of 10.1 percent from 1940 to 1950.

Urban Areas: No portion of the county has been classified as an urban area.

Industrial Areas and Employment: No portion of the county has been classified as an Industrial Area. The major industry is apparel and related products.

Vocational Education: For in-school youth 1 program in Home Economics was offered. No programs were offered in Agriculture, Trade and Industrial, or Distributive Education.

No programs are available in Adult or Extension education.

No area vocational-technical attendance district has been approved.

No retraining programs have been approved.

Susquehanna County

Population: The population in 1960 was 33,137, representing an increase of 3.7 percent from 1950. There had been a decrease of 5.7 percent from 1940 to 1950.

Urban Areas: The urban population represents 15.8 percent of the total. There are 2 urban areas of from 2,500 to 5,000.

Industrial Areas and Employment: No portion of the county has been classified as an Industrial Area. The major industries are electrical machinery, equipment, and supplies; leather and leather products; and apparel and related products.

Vocational Education: For in-school youth programs have not been offered in Distributive Education or Trade and Industrial. There have been 4 programs in Agriculture and 6 in Home Economics.

In Adult or Extension education there are 3 programs in Agriculture, 3 in Home Economics, and none in either Trade and Industrial or Distributive Education.

No area vocational-technical attendance district has been approved.

No retraining programs have been approved.

Tioga County

Population: The 1960 population was 36,614, showing an increase of 3.2 percent from 1950. There had been a 1.3 percent increase from 1940 to 1950.

Urban Areas: The urban population constitutes 19.2 percent of the total. There are 2 urban areas of from 2,500 to 5,000.

Industrial Areas and Employment: No portion of the county has been classified as an Industrial Area. The major industries are leather and leather products; stone, clay, and glass products; and fabricated metal products.

Vocational Education: For in-school youth there are 5 programs in Agriculture, 6 in Home Economics, and none in either Trade and Industrial or Distributive Education.

In Adult or Extension education there are 3 programs in Agriculture, 1 in Home Economics, and none in Trade and Industrial or Distributive Education.

No area vocational-technical attendance district has been approved.

There have been no retraining programs approved.

Union County

Population: In 1960 the population was 25,646, showing an increase of 10.8 percent from 1950. There had been an increase of 14.3 percent from 1940 to 1950.

Urban Areas: The urban population represents 21.5 percent of the total. There are 2 urban areas of 2,500 to 5,000 and 1 of 5,000 to 10,000.

Industrial Areas and Employment: No portion of the county has been classified as an Industrial Area. The major industries are furniture and fixtures, and textile mill products.

Vocational Education: For in-school youth there are 2 programs in Agriculture and 1 in Home Economics. No programs are available in Distributive Education or Trade and Industrial.

In Adult or Extension education 2 programs are available in Agriculture. There is none in Trade and Industrial, Distributive Education, or Home Economics.

One area vocational-technical attendance district has been approved covering the entire county and including Snyder County and the northern portion of Northumberland County. It is not operating.

No retraining programs have been approved.

Venango County

Population: The 1960 population was 65,295, showing a decrease of .1 percent from 1950. There had been a 2.1 percent increase from 1940 to 1950.

Urban Areas: The urban population constitutes 52.1 percent of the total. There are 2 urban areas of from 2,500 to 5,000; 3 from 5,000 to 10,000; and 1 from 10,000 to 30,000.

Industrial Areas and Employment: Franklin and Oil City have been classified as Industrial Areas. The major industries are non-electrical machinery; petroleum refining and related industries; and primary metal products.

Vocational Education: For in-school youth there are 2 programs in Agriculture, 3 in Home Economics, 1 in Trade and Industrial, and none in Distributive Education.

In Adult or Extension education there is 1 Trade and Industrial program. No programs are offered in Agriculture, Home Economics, or Distributive Education.

One area vocational-technical attendance district has been approved covering the entire county and the western part of Forest County. It is not operating.

Four retraining programs had enrolled 60 students.

Warren County

Population: In 1960 the population was 45,582, showing an increase of 6.8 percent from 1950. There had been a .2 percent decrease from 1940 to 1950.

Urban Areas: The urban population constitutes 31.8 percent of the total. There are 3 urban areas: 1 of from 2,500 to 5,000; 1 from 5,000 to 10,000; and 1 from 10,000 to 30,000.

Industrial Areas and Employment: Warren has been classified as an Industrial Area. The major industries are primary metal products; fabricated metal products; electrical machinery, equipment, and supplies; and furniture and fixtures.

Vocational Education: For in-school youth there are 2 programs in Agriculture, 1 in Distributive Education, 3 in Home Economics, and none in Trade and Industrial.

In Adult or Extension education there is one program each in Agriculture and Trade and Industrial; there is none in Home Economics or Distributive Education.

No area vocational-technical attendance district has been approved.

No retraining programs have been approved.

Washington County

Population: In 1960 the population was 217,271, showing an increase of 3.6 percent from 1950. There had been a .6 percent decrease from 1940 to 1950.

Urban Areas: The urban population constitutes 41.4 percent of the total. There are 8 urban areas of from 2,500 to 5,000; 14 from 5,000 to 10,000; and 3 from 10,000 to 30,000.

Industrial Areas and Employment: Washington, Canonsburg, Monongahela, Charleroi, and Donora have been classified as Industrial Areas. The major industries are primary metal products; stone, clay, and glass products; electrical machinery, equipment, and supplies; and fabricated metal products.

Vocational Education: For in-school youth there are 5 programs in Agriculture, 1 in Distributive Education, 10 in Home Economics, and 1 in Trade and Industrial.

In Adult or Extension education there are 3 programs in Agriculture, 9 in Distributive Education, 3 in Home Economics, and 1 in Trade and Industrial.

Two area vocational-technical attendance districts have been approved covering the entire county. Neither is operating.

Ten retraining programs have been approved. The current enrollment is 70; prior enrollment was 255.

Wayne County

Population: In 1960 the population was 28,237. There had been decreases of .8 percent from 1950 to 1960 and of 4.9 percent from 1940 to 1950.

Urban Areas: The urban population constitutes 19.7 percent of the total. There is 1 urban area of from 5,000 to 10,000.

Industrial Areas and Employment: Honesdale has been classified as an Industrial Area. The major industry is apparel and related products.

Vocational Education: For in-school youth there are 3 programs in Agriculture, 3 in Home Economics, and none in Distributive Education or Trade and Industrial.

There are no Adult or Extension programs.

No area vocational-technical attendance district has been approved.

No retraining programs have been approved.

Westmoreland County

Population: In 1960 the population was 352,629, showing an increase of 12.6 percent from 1950. There had been a 3.2 percent increase from 1940 to 1950.

Urban Areas: The urban population constitutes 60.6 percent of the total. There are 9 areas of from 2,500 to 5,000; 12 from 5,000 to 10,000; and 12 from 10,000 to 30,000.

Industrial Areas and Employment: Jeannette, Latrobe, Monessen, and Greensburg have been classified as Industrial Areas. The major industries are primary metal industries; fabricated metal products; electrical machinery, equipment, and supplies; and stone, clay, and glass products.

Vocational Education: For in-school youth there are 9 programs in Agriculture, 7 in Trade and Industrial, 2 in Distributive Education, and 14 in Home Economics.

In Adult or Extension education there are 4 programs in Agriculture, 4 in Distributive Education, 14 in Home Economics, and 3 in Trade and Industrial.

Two area vocational-technical attendance districts have been approved and are operating: the Central Westmoreland School and the Eastern Westmoreland School. The north and south portions of the county are not included in an approved attendance area.

Seventeen retraining programs have been approved. Current enrollment is 85; prior enrollment was 339.

Wyoming County

Population: In 1960 the population was 16,813. There had been increases of .3 percent from 1950 to 1960 and of .4 percent from 1940 to 1950.

__Urban Areas__: No portion of the county has been classified as an urban area.

__Industrial Areas and Employment__: No portion of the county has been classified as an Industrial Area. The major industries are apparel and related products; and leather and leather products.

__Vocational Education__: For in-school youth there are 3 programs in Agriculture, 3 in Home Economics, and none in either Distributive Education or Trade and Industrial.

In Adult or Extension education there are 2 programs: 1 in Agriculture and 1 in Distributive Education. No programs are offered in Home Economics or Trade and Industrial.

No area vocational-technical attendance district has been approved.

Two retraining programs had been approved and enrolled 36 students.

__York County__

__Population__: The population in 1960 was 238,336, showing an increase of 17.6 percent from 1950. There had been an increase of 13.9 percent from 1940 to 1950.

__Urban Areas__: The urban population constitutes 54.0 percent of the total. There are 10 urban areas of from 2,500 to 5,000; 8 from 5,000 to 10,000; 3 from 10,000 to 30,000; and 1 from 50,000 to 100,000.

__Industrial Areas and Employment__: Hanover, Red Lion, York, and the area surrounding York, have been classified as Industrial Areas. The major industries are non-electrical machinery; apparel and related products; food and kindred products; fabricated metal products; furniture and fixtures; and textile mill products.

__Vocational Education__: For in-school youth there are 10 programs in Agriculture, 1 in Distributive Education, 5 in Home Economics, and 1 in Trade and Industrial.

In Adult or Extension education there are 3 programs in Agriculture, 2 in Distributive Education, 2 in Home Economics, and 1 in Trade and Industrial.

One area vocational-technical attendance district has been approved in the county but is not operating.

Seven retraining programs have been approved. Current enrollment is 15; prior enrollment was 165 students.

STUDIES BY COUNTIES

The preceding information concerning the counties can be used as the basic beginnings for local studies which are required to determine the need for local vocational programs and/or schools. A great deal of the additional information each district should use in its planning is available in regularly published reports. These are not copied in this report because they are so lengthy and because the most recent releases should be used at the time a district formation or program addition is considered. Such materials can then be combined to match the proposed boundaries of a district. General statewide or statistical area reports do not match these local needs completely and, therefore, must be used only as comparative information. Some of the more important sources of these materials and statistics are:

1. Industrial Directories, especially the "Pennsylvania Industrial Directory" and supplements thereto released by the Department of Internal Affairs; directories prepared by State and several local Chambers of Commerce which cover specific areas of the State; directories prepared by industrial associations, technical societies, etc.
2. Statistics concerning schools and school districts, especially the "Statistical Report" published by the Department of Public Instruction which gives information on enrollments, attendance, number of schools and school rooms, complete financial and participation information and other important items related to school construction, needs, costs, etc. Supplementary data on enrollments in each school by grade and curricular grouping are also available.
3. Statistics on trends and ratios of employment, unemployment, occupational categories, etc., which are available monthly for each county, SMSA, State, and for the Nation through the Department of Labor and the Bureau of Employment Security.
4. Population and business statistics and ratios available from the Department of Commerce including regular census reports, the most current business census, and projections of population, employment, etc., for all major areas of the State and Nation.
5. Many other sources of current data are available and should be made available to school planners through the Department of Public Instruction on a regular basis.

MAJOR EMPLOYMENT GROUPINGS

Twelve major employment groupings are reported on monthly by the Bureau of Employment Security. These reports show the total number of employees working in each grouping and the changes from preceding months. Reports are available for each county; for the major statistical areas in the State; for the State; and for the Nation. The rate of increase or decrease within an employment grouping, when applied to a local district, gives a good indication of the general types of jobs in oversupply and jobs in which there are shortages.

To determine the need for vocational-technical training programs a school district should review these reports monthly and establish a need ratio for each type of employment and for the major individual jobs covered in each.

The following charts indicate the long-term increase or decrease in employment ratios for each of the employment groupings. These show the changes for the State as a whole and for the major statistical areas from 1950 to 1963.

Manufacturing of Durable Goods

Employment in the manufacturing of durable goods has decreased percentagewise in the State and in 6 of the 12 statistical areas. The variances in percentage of total employment range from a low of 7.69 percent in Altoona to 31.39 percent in Erie. This shows material deviations in types of industry located in the various areas of the State and each local district, in analyzing these ratios, would be required to offer different types of training, particularly for specialized skilled and technical workers. Approximately one-third of the employees in this grouping are in related classifications such as sales, service, and clerical in which there would be employment opportunities in any of the areas showing a total percentage of 15 or more.

Table 4--Manufacturing of Durable Goods for 1950 and 1963.

STATISTICAL AREA	1950		1963	
	Average Employment In Thousands	% of Total Employment	Average Employment In Thousands	% of Total Employment
Allentown-Bethlehem-Easton	50.0	25.75	51.4	24.64
Altoona	1.9	3.93	3.6	7.69
Erie	36.7	38.31	28.6	31.39
Harrisburg	12.4	8.83	13.5	8.20
Johnstown	19.7	20.35	15.6	19.77
Lancaster	22.5	21.74	28.1	23.40
Philadelphia	230.3	14.54	266.5	15.20
Pittsburgh	279.2	32.24	225.1	26.79
Reading	24.1	20.96	26.3	21.66
Scranton	6.1	6.19	9.4	10.98
Wilkes-Barre-Hazelton	5.1	3.48	11.1	9.20
York	21.7	23.82	19.9	19.66
State	831.4	19.55	795.2	18.59

Manufacturing of Non-Durable Goods

Manufacturing of non-durable goods decreased in the State and in 8 of the 12 statistical areas. The range of percentage of total employment is from a low of 5.14 percent in the Pittsburgh statistical area to a high of 27.42 percent in the Wilkes-Barre-Hazelton area. With the large traditional industrial areas of the State showing relatively low percentages in this grouping, there is definite indication of the continuation of natural resource based manufacturing in the traditional centers. Analysis by individual counties of their ratios and need for training must include consideration of the different types of skills generally required in some of the non-durable manufacturing fields.

Table 5--Manufacturing of Non-Durable Goods for 1950 and 1963.

STATISTICAL AREA	1950		1963	
	Average Employment In Thousands	% of Total Employment	Average Employment In Thousands	% of Total Employment
Allentown-Bethlehem-Easton	45.4	23.38	42.4	20.33
Altoona	5.5	11.36	8.4	17.95
Erie	8.8	9.19	8.2	9.00
Harrisburg	19.3	13.74	19.9	12.22
Johnstown	5.7	5.89	7.7	9.76
Lancaster	19.6	18.94	19.9	16.57
Philadelphia	317.6	20.05	269.6	15.38
Pittsburgh	54.1	6.25	43.2	5.14
Reading	31.8	27.65	25.3	20.84
Scranton	23.4	23.76	21.4	25.00
Wilkes-Barre-Hazelton	33.0	22.49	33.1	27.42
York	21.8	23.93	21.0	20.75
State	649.2	15.26	604.4	14.13

All Manufacturing Employment

Combining the manufacturing of durable and non-durable goods, there is a small statewide decrease in the total employment. This decrease is also found in 10 of 12 statistical areas. The deviation between areas, however, is not as great since those areas not engaged in durable goods manufacturing usually have high levels of non-durable manufacturing. The variance is from a low of 20.52 percent in the Harrisburg area to a high of 44.97 percent in the Allentown-Bethlehem-Easton area. Statewide, general productivity averages remained about the same over the last several years with the exception of material declines in the late 50's and early 60's. There has been a heavy decrease in the need for unskilled and semi-skilled workers. Opportunities for skilled workers are greater than in past. However, training must be more specialized and at a higher level. Opportunities for employment in technical, clerical, and service areas have nearly doubled over the period from 1950 to 1963. Such programs should be included in any vocational-technical training conducted in any of the counties forming a portion of the above listed statistical areas.

Table 6--All Manufacturing Employment for 1950 and 1963.

STATISTICAL AREA	1950		1963	
	Average Employment In Thousands	% of Total Employment	Average Employment In Thousands	% of Total Employment
Allentown-Bethlehem-Easton	95.4	49.12	93.8	44.97
Altoona	7.4	15.29	12.0	25.64
Erie	45.5	47.49	36.8	40.39
Harrisburg	31.7	22.56	33.4	20.52
Johnstown	25.4	26.24	23.3	29.53
Lancaster	42.1	40.68	48.0	39.97
Philadelphia	547.9	34.58	536.1	30.58
Pittsburgh	333.3	38.49	268.3	31.94
Reading	55.9	48.61	51.6	42.50
Scranton	29.5	29.95	30.8	35.98
Wilkes-Barre-Hazelton	38.1	25.97	44.2	36.62
York	43.5	47.75	40.9	40.41
State	1,480.6	34.81	1,399.6	32.72

Contract Construction

There has been a slight decrease in the total employment engaged in contract construction statewide and 6 of the statistical areas show decreases while 6 show increases. Ranges of total employment are from a low of 1.87 percent in the Scranton area to a high of 4.15 percent in the York area. Fluctuations occur rapidly in this classification and are related rather directly to the expansion of other job opportunities requiring industrial or residential construction. Many of the skilled trade areas of training which have been offered in vocational schools in the past should not be concentrated on in the future to the same extent. In view of the relatively small percentage of the total labor force involved in related construction operations, this area must be analyzed continuously by a county or a district to determine that surpluses of programs are not implemented.

Table 7--Contract Construction Employment for 1950 and 1963.

STATISTICAL AREA	1950		1963	
	Average Employment In Thousands	% of Total Employment	Average Employment In Thousands	% of Total Employment
Allentown-Bethlehem-Easton	6.0	3.09	6.4	3.07
Altoona	1.2	2.48	1.3	2.78
Erie	2.4	2.51	2.5	2.74
Harrisburg	6.5	4.62	5.8	3.56
Johnstown	2.3	2.38	2.1	2.66
Lancaster	4.4	4.25	4.8	4.00
Philadelphia	67.7	4.27	64.9	3.70
Pittsburgh	32.4	3.74	32.4	3.86
Reading	3.9	3.39	3.8	3.13
Scranton	2.3	2.34	1.6	1.87
Wilkes-Barre-Hazelton	3.5	2.39	3.5	2.90
York	3.6	3.95	4.2	4.15
State	159.8	3.76	148.8	3.48

Transportation and Public Utilities

There has been a decrease statewide and in 11 of the 12 statistical areas in the percentage of employees engaged in transportation and public utilities employment. The one area showing an increase made material gains in this grouping of nearly 4 times the percentage of workers involved in 1963 over 1950. This was due to industrial development of a specialized nature in that area. The deviation of employment by areas is greater in this classification, ranging from 4.00 percent in the Lancaster area to 18.80 percent in the Altoona area. Training for many specialized job opportunities in this grouping should be included in vocational-technical programs in any county or area where 7 or more percent of the total work force is so engaged.

Table 8--Transportation and Public Utilities Employment for 1950 and 1963.

STATISTICAL AREA	1950		1963	
	Average Employment In Thousands	% of Total Employment	Average Employment In Thousands	% of Total Employment
Allentown-Bethlehem-Easton	11.8	6.08	10.6	5.08
Altoona	17.4	35.95	8.8	18.80
Erie	6.2	6.47	4.7	5.16
Harrisburg	14.8	10.53	11.9	7.31
Johnstown	6.5	6.71	4.7	5.96
Lancaster	4.9	4.73	4.8	4.00
Philadelphia	115.2	7.27	107.1	6.11
Pittsburgh	72.5	8.37	54.4	6.47
Reading	6.5	5.65	5.7	4.70
Scranton	8.6	8.73	6.1	7.13
Wilkes-Barre-Hazelton	8.9	6.07	6.0	4.97
York	3.8	4.17	15.2	15.02
State	329.8	7.76	259.9	6.07

Wholesale and Retail Trade

This over-all employment grouping has increased percentagewise in the State and in 11 of the 12 statistical areas. Even in the area showing a decrease, the percentage was small. Many job and skill groupings of employment are available in all statistical areas in wholesale and retail trade. Programs in Distributive Education, General Sales, Marketing, and most of the business and clerical fields should be expanded. The offering of many of these curricula in comprehensive schools on a fully participated basis is discussed in later sections of this report.

Table 9--Wholesale and Retail Trade Employment for 1950 and 1963.

STATISTICAL AREA	1950		1963	
	Average Employment In Thousands	% of Total Employment	Average Employment In Thousands	% of Total Employment
Allentown-Bethlehem-Easton	24.8	12.77	29.7	14.24
Altoona	7.6	15.70	7.1	15.17
Erie	14.2	14.83	13.6	14.93
Harrisburg	21.2	15.09	25.8	15.80
Johnstown	13.4	13.84	11.6	14.70
Lancaster	13.2	12.75	17.1	14.24
Philadelphia	260.4	16.44	300.9	17.16
Pittsburgh	140.0	16.17	145.3	17.30
Reading	14.0	12.17	15.9	13.10
Scranton	14.3	14.52	14.1	16.47
Wilkes-Barre-Hazelton	19.6	13.36	18.7	15.49
York	11.7	12.84	15.2	15.02
State	648.4	15.24	680.9	15.92

Finance, Insurance, and Real Estate

Recent business uptrends in most portions of Pennsylvania during the last 2 years are evidenced by the increase in percentage of employment in this grouping, statewide and in every statistical area. There are many employment opportunities for which training should be offered, particularly in the sales, service, and clerical fields in connection with this employment grouping. Very few such programs are offered in area vocational-technical schools. There should either be expanded or revised participation arrangements made for comprehensive high schools, post-high schools, and other educational institutions.

Table 10--Finance, Insurance, and Real Estate Employment for 1950 and 1963.

STATISTICAL AREA	1950		1963	
	Average Employment In Thousands	% of Total Employment	Average Employment In Thousands	% of Total Employment
Allentown-Bethlehem-Easton	3.0	1.55	5.2	2.49
Altoona	1.0	2.07	1.1	2.35
Erie	1.6	1.67	2.6	2.85
Harrisburg	4.8	3.42	6.4	3.93
Johnstown	1.5	1.55	1.7	2.15
Lancaster	1.6	1.55	2.3	1.92
Philadelphia	63.4	4.00	84.4	4.81
Pittsburgh	27.1	3.13	32.7	3.89
Reading	2.8	2.43	4.1	3.38
Scranton	2.0	2.03	2.4	2.80
Wilkes-Barre-Hazelton	2.6	1.77	3.4	2.82
York	1.1	1.21	1.9	1.88
State	121.5	2.86	157.8	3.69

Service and Miscellaneous

There have been material increases in the percentage of the total labor force employed in this grouping statewide and in all of the statistical areas. Most of the employment increases have been in traditional service job classifications, including health services. Programs in all vocational-technical schools and comprehensive schools should be expanded to offer more training from the occupational level through the technical level to provide more adequately trained employees for many service occupations.

Table 11--Service and Miscellaneous Employment for 1950 and 1963.

STATISTICAL AREA	1950		1963	
	Average Employment In Thousands	% of Total Employment	Average Employment In Thousands	% of Total Employment
Allentown-Bethlehem-Easton	17.1	8.81	22.3	10.69
Altoona	4.1	8.47	5.7	12.18
Erie	8.3	8.66	10.2	11.20
Harrisburg	13.2	9.39	19.1	11.73
Johnstown	7.3	7.54	9.5	12.04
Lancaster	8.1	7.83	12.7	10.57
Philadelphia	165.2	10.43	229.9	13.11
Pittsburgh	87.3	10.08	124.1	14.77
Reading	9.4	8.17	13.4	11.04
Scranton	10.5	10.66	10.8	12.62
Wilkes-Barre-Hazelton	12.2	8.32	12.2	10.11
York	6.1	6.70	9.3	9.19
State	388.0	9.12	530.6	12.41

Government

Employment in all statistical areas and in the State as a whole has increased in this grouping which includes local, district, State, and Federal employment. One of the major areas of increase has been in school employment and is related directly to the population increase in the State and to increased educational services. Continuing opportunities will exist in many job classifications in government employment. Particular emphasis should be given to clerical-, business-, technical-, and professional-centered training programs. The number of programs must be related to a survey of political subdivisions operating within any area offering or planning to offer skill-centered education.

Table 12--Government Employment for 1950 and 1963.

STATISTICAL AREA	1950		1963	
	Average Employment In Thousands	% of Total Employment	Average Employment In Thousands	% of Total Employment
Allentown-Bethlehem-Easton	8.9	4.58	14.7	7.05
Altoona	3.6	7.44	4.8	10.26
Erie	5.6	5.85	8.1	8.89
Harrisburg	31.8	22.63	43.1	26.47
Johnstown	6.7	6.92	9.4	11.91
Lancaster	5.6	5.41	8.2	6.83
Philadelphia	143.7	9.07	194.4	11.09
Pittsburgh	55.6	6.42	78.8	9.38
Reading	6.8	5.91	9.6	7.91
Scranton	7.4	7.51	8.2	9.58
Wilkes-Barre-Hazelton	11.7	7.98	12.6	10.44
York	5.8	6.37	8.8	8.70
State	338.7	7.96	473.4	11.08

Farm

There has been a decrease in the percentage of the total work force engaged in farming statewide and in every statistical area and also there are material differences in the current percentages employed in this grouping by statistical area. These range from a low of 1.00 percent in the 4 counties constituting the Pittsburgh statistical area to a high of 8.99 percent in the Lancaster area. The type of employees required in farming is also changing and requiring more training before many placements can be made. Traditional agricultural programs should be modified to include more offerings in the skilled and technical areas which are required for all farm workers except farm laborers.

Table 13--Farm Employment for 1950 and 1963.

STATISTICAL AREA	1950		1963	
	Average Employment In Thousands	% of Total Employment	Average Employment In Thousands	% of Total Employment
Allentown-Bethlehem-Easton	8.5	4.38	4.8	2.30
Altoona	1.5	3.10	.9	1.92
Erie	4.1	4.28	2.5	2.74
Harrisburg	5.2	3.70	3.6	2.21
Johnstown	4.6	4.75	2.8	3.55
Lancaster	13.1	12.66	10.8	8.99
Philadelphia	33.6	2.12	23.8	1.36
Pittsburgh	12.1	1.40	8.4	1.00
Reading	5.5	4.78	4.4	3.62
Scranton	1.6	1.62	1.0	1.17
Wilkes-Barre-Hazelton	2.4	1.64	1.4	1.16
York	7.2	7.90	4.8	4.74
State	182.3	4.29	106.7	2.49

Self-Employment, Including Unpaid Family and Domestic Workers

Employment in this grouping has increased in the State and in 11 of the 12 statistical areas. These percentage increases are due primarily to the need for more service workers with adequate training in most parts of the State. Even in the one area showing a decline in percentage the change was small and the actual number of workers employed in this grouping increased and will continue to increase. Most of the training required for this group of workers can be offered even in the small comprehensive high schools.

Table 14--Self-Employment, Including Unpaid Family and Domestic Workers, for 1950 and 1963.

STATISTICAL AREA	1950		1963	
	Average Employment In Thousands	% of Total Employment	Average Employment In Thousands	% of Total Employment
Allentown-Bethlehem-Easton	17.6	9.06	20.6	9.88
Altoona	4.6	9.50	5.1	10.90
Erie	7.9	8.25	10.1	11.09
Harrisburg	11.3	8.04	13.7	8.42
Johnstown	8.5	8.78	9.0	11.41
Lancaster	10.5	10.14	11.4	9.49
Philadelphia	185.0	11.68	210.3	12.00
Pittsburgh	74.9	8.65	86.3	10.27
Reading	10.2	8.87	12.9	10.63
Scranton	9.2	9.34	9.5	11.10
Wilkes-Barre-Hazelton	13.2	9.00	14.2	11.76
York	8.3	9.11	11.3	11.17
State	427.6	10.05	470.3	11.00

All Non-Manufacturing Employment

This major grouping includes government; service and miscellaneous; finance, insurance, and real estate; wholesale and retail trade; transportation and public utilities; and contract construction, which have been reported above. In addition, it includes mining employment which has declined materially, both statewide and in the statistical areas. Statewide decreases resulted from a change in the total employment in 1950 of 176,500 to a 1963 average employment of 47,700. The percentage of the total employment force dropped from 4.15 percent in 1950 to 1.11 percent in 1963. There are few employment opportunities in mining which will be more than handled by the large number of unemployed in this grouping.

Considering all non-manufacturing employment there has been a statewide increase and an increase in 8 of the 12 statistical areas. The analysis of the specific groupings constituting this composite must be made by each individual county or district. Most vocational-technical programs offered in the State in the past were primarily concerned with manufacturing employment. There have been too few programs in all of the service, trade, transportation, and other related non-manufacturing areas of employment.

Table 15--All Non-Manufacturing Employment for 1950 and 1963.

STATISTICAL AREA	1950		1963	
	Average Employment In Thousands	% of Total Employment	Average Employment In Thousands	% of Total Employment
Allentown-Bethlehem-Easton	72.7	37.44	89.4	42.86
Altoona	34.9	72.11	28.8	61.54
Erie	38.3	39.98	41.7	45.77
Harrisburg	92.3	65.69	112.1	68.86
Johnstown	58.3	60.23	43.8	55.51
Lancaster	37.8	36.52	49.9	41.55
Philadelphia	817.8	51.62	982.9	56.07
Pittsburgh	445.6*	51.46*	477.1	56.79
Reading	43.4	37.74	52.5	43.25
Scranton	58.2	59.09	44.3	51.75
Wilkes-Barre-Hazelton	93.0	63.39	60.9	50.46
York	32.1	35.24	44.2	43.68
State	2,162.7	50.85	2,299:1	53.75

* Labor Disputes

EMPLOYMENT AND UNEMPLOYMENT

In addition to the analysis of population, employment by industrial and classification groupings, and the vocational-technical offerings available within a locality, each district must analyze the unemployment ratios in order to plan adequate skill-centered training programs which will benefit the area.

These studies must be conducted on a local basis using local and county statistics since they should be related as specifically as possible to the employment opportunities in the locality.

No employment-unemployment factor considered alone is very significant in terms of the educational programs which should be offered. For example, a decrease in the rate of unemployment might be an indication of improving conditions or it might be an indication of a declining work force. In Pennsylvania the decline in unemployment percentages has been an indication of both of the above and, therefore, must be analyzed very carefully in each county before additional programs are developed. It is not the purpose of this report to attempt to give specific analyses which can be applied to the planning for a particular school. However, the following general relationships statewide and in the 12 statistical areas will serve as an indication of the type of information which should be reviewed and combined with an industrial survey of the area and a study of job opportunities within individual job classifications and groupings.

Statewide Employment-Unemployment

The total civilian work force averaged 4,572,700 for 1950. (All figures in this section are to the nearest 1,000.) This increased to 4,608,000 average for 1963. However, the peak average work force was 4,753,200 in 1958. There was a decline each year from 1958 through 1963 which was partially responsible for the percentage of unemployment which has declined from 10.5 percent in 1958 to an average of 7.2 percent in 1963; and has continued to decline materially during 1964.

The peak average total employment in the State was 4,487,400 average for 1953. This declined to 4,234,700 average for 1961 and has increased to 4,275,700 average for 1963. These comparisons indicate why a district planning additional programs must analyze trends in addition to current statistics since there were fewer workers employed in Pennsylvania during 1963 than there were in 1951, 1952, 1953, 1955, 1956, 1957, 1960, and 1962.

Statistical Area Employment-Unemployment

Allentown-Bethlehem-Easton Statistical Area: The total civilian work force averaged 203,300 in 1950 and 221,000 for 1963. The low for the period was in 1950 and the high in 1963.

Unemployment was 4.5 percent average in 1950 and 5.6 percent average in 1963. It has ranged from a low of 2.8 percent for 1953 and a high of 8.2 percent for 1958.

The total employment was 194,200 in 1950 and 208,600 in 1963. The low was 197,100 in 1954; the high was 210,500 in 1956.

Altoona Statistical Area: The total civilian work force averaged 53,600 in 1950 and 52,000 in 1963, which was the lowest work force level during that period. The high was 55,400 in 1952.

Unemployment averaged 9.7 percent in 1950 and 10.0 percent in 1963. The low was 6.3 percent in 1951; the high was 17.0 percent in 1954.

Total employment averaged 48,400 in 1950 and 46,800 in 1963. The low was 44,300 in 1954; the high was 51,700 in 1951.

Erie Statistical Area: The total civilian work force averaged 100,600 in 1950 and 98.1 in 1963. The low was 97,500 in 1961; the high was 102,100 in 1953.

Unemployment averaged 4.8 percent in 1950 and 7.1 percent in 1963. The low was 2.5 percent in 1951; the high was 13.2 percent in 1958.

Total employment averaged 95,800 in 1950 and 91,100 in 1963. The low was 87,400 in 1961; the high was 98,900 in 1951.

Harrisburg Statistical Area: The total civilian work force averaged 144,900 in 1950 and 170,200 in 1963. The high for the period was 170,200 in 1963; the low was 144,900 in 1950.

Unemployment averaged 3.0 percent in 1950 and 4.3 percent in 1963. The low was 1.8 percent in 1951; the high was 6.3 percent in 1958.

Total employment averaged 140,000 in 1950 and 162,800 in 1963. The high for the period was 162,800 in 1963; the low was 140,500 in 1950.

Johnstown Statistical Area: The total civilian work force averaged 104,500 in 1950 and 87,800 in 1963. The high for the period was 104,500 in 1950; the low was 87,800 in 1963.

Unemployment averaged 7.4 percent in 1950 and 10.1 percent in 1963. The low for the period was 4.1 percent in 1951; the high was 17.9 percent in 1961.

Total employment averaged 96,800 for 1950 and 78,900 for 1963. The low for the period was 76,600 in 1961; the high was 100,000 in 1951.

Lancaster Statistical Area: The total civilian work force averaged 107,100 in 1950 and 124,100 in 1963. The low for the period was 107,000 in 1951 and 1952; the high was 124,100 in 1963.

Unemployment averaged 3.4 percent in 1950 and 3.2 percent in 1963. The low was 2.1 percent in 1952; the high was 5.3 percent in 1958.

Total employment averaged 103,500 in 1950 and 120,100 in 1963. The low for the period was in 1950 and the high in 1963.

Philadelphia Statistical Area: The total civilian work force averaged 1,689,200 for 1950 and 1,875,600 for 1963. The low for the period was 1,689,200 in 1950; the high was 1,875,800 in 1962.

Unemployment averaged 6.2 percent in 1950 and 6.5 percent in 1963. The low was 3.3 percent in 1953; the high was 8.6 percent in 1958.

Total employment averaged 1,584,300 in 1950 and 1,753,100 in 1963. The low was 1,584,300 in 1950 and the high was 1,755,200 in 1962.

Pittsburgh Statistical Area: The total civilian work force averaged 930,400 in 1950 and 912,600 in 1963. The low was 912,600 in 1963; the high was 981,700 in 1957.

Unemployment averaged 6.9 percent in 1950 and 7.9 percent in 1963. The low was 3.5 percent in 1951; the high was 11.0 percent in 1961.

Total employment averaged 865,900 in 1950 and 840,100 in 1963. The low was 837,700 in 1962; the high was 929,300 in 1958.

Reading Statistical Area: The total civilian work force averaged 122,200 in 1950 and 127,400 in 1963. The low was 120,000 in 1952; the high was 127,400 in 1963.

Unemployment averaged 5.1 percent in 1950 and 4.7 percent in 1963. The low was 3.6 percent in 1953; the high was 8.1 percent in 1954.

Total employment averaged 115,000 in 1950 and 121,400 in 1963. The low was 112,600 in 1954; the high was 121,400 in 1963.

Scranton Statistical Area: Total civilian work force averaged 109,200 in 1950 and 96,500 in 1963. The low was 96,500 in 1963; the high was 109,200 in 1950.

Unemployment averaged 9.8 percent in 1950 and 11.3 percent in 1963. The low was 9.4 percent in 1952 and the high was 15.5 percent in 1958.

Total employment averaged 98,500 in 1950 and 85,600 in 1963. The low was 85,600 in 1963; the high was 98,500 in 1950.

Wilkes-Barre-Hazelton Statistical Area: The total civilian work force averaged 161,200 in 1950 and 133,900 in 1963. The low was 133,900 in 1963; the high was 161,200 in 1950.

Section II
Employment Trends and Job Opportunities

Unemployment averaged 9.0 percent in 1950 and 9.9 percent in 1963. The low was 8.3 percent in 1951; the high was 17.0 percent in 1958.

Total employment averaged 146,700 in 1950 and 120,700 in 1963. The low was 116,900 in 1961; the high was 146,700 in 1950.

York Statistical Area: The total civilian work force averaged 94,600 in 1950 and 106,800 in 1963. The low was 94,600 in 1950; the high was 106,800 in 1963.

Unemployment averaged 3.7 percent in 1950 and 5.2 percent in 1963. The low for the period was 1.7 percent in 1953; the high was 7.2 percent in 1958.

Total employment averaged 91,100 in 1950 and 101,200 in 1963. The low was 91,100 in 1950; the high was 101,200 in 1963.

Employment-Unemployment by Occupations

The large differences in employment-unemployment ratios noted above in the several Major Statistical Areas emphasize the fact that projections of educational-training needs must be done on a district basis and must apply to conditions at the time the educational planning is being done.

Occupational patterns throughout the nation and Pennsylvania show rapid decreases in the employment opportunities in many traditional production-type jobs. Most of the unemployment in the Commonwealth is in the following occupational groupings, which are listed in the order of the highest percentage of the total unemployed group:

Laborers, except farm labor (Unskilled workers)
Operatives and Kindred Workers (Semi-skilled workers)
Craftsmen, Foremen, and Kindred Workers (Skilled workers)

There is little general unemployment in the other job groupings, except among untrained workers who list other job backgrounds but have little current competency for such jobs. Many of the semi-skilled, skilled, and even some unskilled workers, are being trained or re-trained for current job openings. These retraining programs are mentioned by county in this section. Each program has been locally determined by the Bureau of Employment Security to fill job needs in that locality. Such a specific study is needed in each county to determine which programs should be offered for in-school youth.

To relieve the unemployment situation and to make certain the workers of tomorrow are not faced with the same lack of training in occupations in which there are opportunities for employment, it is necessary to offer more education and training in the expanding occupations. The following table shows changes in percentages nationally of those employed in major occupational groupings from 1950 to 1960, as compiled by the Census Bureau.

Table 16--Changes from 1950 to 1960 in Occupational Groupings.

Class of Worker	% Change 1950 to 1960
Professional, Technical and Kindred Workers	+65.46
Service Workers, Except Private Household	+31.84
Clerical and Kindred Workers	+28.18
Private Household Workers	+17.68
Sales Workers	+15.15
Craftsmen, Foremen, and Kindred Workers	+11.60
Managers, Officials, and Proprietors, Except Farm	+ 9.92
Laborers, Except Farm and Mine	+ 4.12
Operatives and Kindred Workers	- 1.32
Laborers and Foremen, Farm and Mine	-13.27
Farmers and Farm Managers	-37.72
Total	+11.78

These same general ratios still exist in Pennsylvania. Therefore, statewide, most training should be concentrated in the above groupings down through Sales Workers. However, in five of the Major Statistical Areas in Pennsylvania these ratios vary so much that training should also be concentrated in other job groupings. There is an even greater variance among counties and districts. No employment projections should be made except on a local basis, after a local study. No general statewide formula should be adopted since even the best validated single formula could not apply to much more than half of the Commonwealth.

Local determinations are essential. Local educators, employers, and other interested groups must survey the employment-unemployment ratios and the education-training continuum on a cooperative basis. The State Board and the Department of Public Instruction should extend as much assistance to local districts as possible. Methods of improving such assistance are discussed in Section III of this report.

SUMMARY OF RECOMMENDATIONS

1. Each school district, or county, or AVTS district, or Technical Institute district, or Community College district which operates or plans to operate any type of vocational education or skill-centered employment training must continuously evaluate the monthly statistical information available through State and Federal departments in order to make certain that the programs which are offered are needed and those which are planned are directly related to projected need. In addition, counties or areas not offering vocational or skill-centered training should evaluate employment and population trends and determine specifically what programs should be offered.

2. The Department of Public Instruction must make more information of a demographic nature available to local and area districts and must provide staff and facilities to assist in the evaluation of program needs.

3. Industrial associations and individual businesses must be involved by every school district in the planning of needed vocational and skill-centered curricula. Traditional programs should not be offered solely because they have been offered. Both the program made available to the students and the course content and curricula must be modified continuously to meet changing employment standards and needs.

4. No study of the demographic factors of an area can remain current for more than a very few weeks or months. Therefore, the State Board and the DPI must provide facilities for a continuing analysis of employment-unemployment trends, migration ratios, etc., and should relate program evaluation to such continuing analyses.

5. The planning of any school offering skill-centered curricula must be directly related to local problems and needs. No fixed attendance ratio or geographical area should determine either the number or type of curricula to be offered. Such decisions must be based on student needs and interests and on a continuous analysis of employment potential.

SECTION III

ORGANIZATION OF THE ADMINISTRATION OF VOCATIONAL-TECHNICAL EDUCATION

The success of any State program of occupational, vocational, or technical education depends to a considerable extent on the leadership exerted by the Department of Public Instruction through its divisions and/or bureaus assigned the responsibility of administering such programs and on the State Board of Education which is responsible for policy determination and over-all administration.

This section considers the responsibilities of the State Board; the organization of the Bureau of Technical and Continuing Education; and the administration of vocational-technical education in Pennsylvania. Organizational changes and administrative recommendations are made.

THE STATE BOARD OF EDUCATION

The new State Board is to be commended for its vigorous drive to carry out the intent of the 1963 legislation providing for an expanded and improved program of vocational-technical education for the Commonwealth. Some organizational changes need to be made, though, if the Board is to achieve its objectives and establish a sound continuum of vocational-technical education in Pennsylvania. These changes involve the Department of Public Instruction, the Division of Higher Education, and the Bureau of Technical and Continuing Education, which should be the prime instrument in translating Board policies on vocational-technical education into classroom results. Working relationships with other Departments must also be reviewed and inter-bureau functions more completely defined.

Members of the State Board are appointed for six-year terms by the Governor. Terms are staggered so that some new full-term appointments are made each year. This helps assure continuity of educational policy, especially since the Governor of Pennsylvania cannot succeed himself.

The Board is charged with setting educational policies for the Commonwealth and should be given complete freedom, within budgetary limits, in determining these policies and in setting guidelines for the operation of the Department of Public Instruction. Once an appropriation is made, the budget is set and/or Federal educational funds are received, no other State department should interfere with the expenditure of funds and should not impose restrictions or supervision. The State Board must be the final authority in directing the Department of Public Instruction. This problem is discussed further in the section on Fiscal Policy and Legislation.

The State Board of Education should also appoint the Superintendent of Public Instruction. At the present time the Superintendent, the Assistant Superintendents, and the Director of Vocational Education, are appointed by the Governor. Generally, these appointments are in keeping with the best judgment of the State Board and pose no problem; but there is no guarantee that this will always be true. If the State Board is to be held responsible for public education and, therefore, for the performance of the Department of Public Instruction, then it is in the best interests of the Commonwealth and sound administration for the State Board to appoint the Superintendent.

THE SUPERINTENDENT OF PUBLIC INSTRUCTION

The Superintendent should appoint Department staff, subject to the approval of the State Board. Assistant Superintendents, Directors, and Division Chiefs should be appointed by the Superintendent after approval by the Board. All other DPI Staff should be nominated by Assistant Superintendents or Directors and appointed by the Superintendent.

In selecting the Director of Vocational Education the Superintendent will be guided by the qualifications set in the State Plan for Vocational Education. In addition, he should seek the advice of the industrial and business groups interested in education. The qualifications for the State Director are set in terms of education, experience, degrees, and certification requirements. These standards are intended to, and probably do, assist in securing professionally qualified leadership in the position. In a time of rapid change, however, they may become roadblocks rather than aids and as the State Plan is rewritten the qualifications should be stated generally to give the Superintendent and the State Board leeway in selecting the best man for the job.

Naturally the Superintendent assumes responsibility for the normal intra-departmental relationships necessary in the functioning of the Department of Public Instruction. The overlapping of Act 463 and Act 484 creates an area in which more than normal coordinating effort is going to be needed for effective performance. Some way must be found to utilize the vocational-technical know-how of the Bureau of Technical and Continuing Education in the operation of technical divisions or departments in the community colleges. Otherwise the administration of post-high school technical education at both the state and local level will drift into a state of crippling confusion. The success of a vocational-technical program depends on the maintenance of a logically planned, administered, and enforced continuum from junior high school through high school and into the 13th and 14th years, whether such post-high school work is located in an area vocational-technical school, a technical institute, or a community college.

Several of the Bureaus in the Department perform functions closely related to some of the work done in the Bureau of Technical and Continuing Education. Cooperative inter-bureau studies should search out and eliminate needless duplication of effort. The areas of research, district organization, curriculum, teacher certification, fiscal and pupil accounting are suggested.

Section III

Organization of the Administration of Vocational-Technical Education

It is important that the DPI and all Bureaus and Divisions thereof be completely responsive to the policy decisions of the Board and strong enough to advise the Board in setting policy. Efficient and cooperating staff is necessary to accomplish this.

THE BUREAU OF TECHNICAL AND CONTINUING EDUCATION

The present professional staff of the Bureau has adequately handled the traditional functions required of it in the past, except for functions such as evaluations, curriculum development, and program improvement, for which staff has not been available. The Director of Vocational Education provides able leadership for this Bureau and many of the Sections are very capably administered. However, minimal services are no longer adequate in Pennsylvania; and, as schools and programs are added under the provisions of the new legislation, new staff members will be needed and assignments will need to be changed.

At the time of our evaluation in September and October, 1964, the Bureau staff consisted of the State Director of Vocational-Technical Education, 26 supervisors, consultants, and specialists based in Harrisburg, and 68 field representatives.

Agricultural Education

The Agricultural Education staff consisted of a State Supervisor based in Harrisburg and 22 Area Supervisors who were stationed in the offices of county superintendents about the State. (Five of the field positions were vacant and may not be filled until a reorganization of the Bureau is blueprinted.) According to Section 1804 of the School Code, the Area Supervisors are "selected by the State Board for Vocational Education upon the nomination of the county superintendent of schools and approved by the county board of school directors. They shall possess the qualifications established in the State Plan for Vocational Education...." The Area Supervisors work directly with some 300 teachers employed in 284 local Agricultural programs. There are no vocationally trained supervisors in the local schools.

Business Education

The staff in Business Education is one Supervisor stationed in Harrisburg. Business Education courses have not been reimbursable from State and Federal vocational education funds prior to the passage of the Vocational Education Act of 1963 (P.L.88-210) and State Act 463. Now that those which are truly vocational are reimbursable, the staff will need augmenting. However, there would seem to be little reason for the continued separation in State supervision of Business Education courses and Distributive Education courses.

Section III
Organization of the Administration
of Vocational-Technical Education

Distributive Education

The State Supervisor of Distributive Education also serves as Assistant Director of Vocational Education. He has one Assistant Supervisor in the Harrisburg office and two field service units. One of these is contracted with Temple University and the other with the University of Pittsburgh. Each unit has a teacher-educator and the field instructors. The teacher-educator teaches in the universities and does some supervision of local programs. The field instructors spend most of their time conducting adult classes for people employed in distributive occupations and for local school personnel.

Homemaking Education

The staff here consisted of a State Supervisor and an Assistant in the Harrisburg office and 27 Area Supervisors headquartered in the offices of county superintendents about the State. They are selected in the same manner as the Agricultural supervisors, by the State Board on the nomination of the county superintendents. (There were three vacancies in the field staff.) The Homemaking Supervisor, again like the Agricultural Supervisor, works directly with the teachers in some 300 high schools which have reimbursed programs.

Trade and Industrial Education

The T & I staff included a State Supervisor and three staff people in the Harrisburg office, with nine Area Coordinators under contractual arrangement with the University of Pennsylvania, Pennsylvania State University, and the University of Pittsburgh. There were four vacancies in the field offices left by coordinators who went to local positions at greatly increased salaries. The functions of these coordinators are largely supervisory and consultative. They work with local administrators, supervisors, and/or coordinators, not directly with teachers. Local vocational directors, supervisors, and coordinators are hired and paid by the local districts, and the districts are not reimbursed any part of their salaries. Employment of this personnel by local districts is mandatory however.

Other Services

In addition to the major in-school vocational staffs discussed above, there are also the following services for which supervision is provided by the Bureau: Family, Migrant, and Nursing Education; Military and Civil Defense training; State Retraining under School Code Section 2508.3; Manpower Development and Training; Area Redevelopment Act training; Continuing (Adult) Education; Farm and Home Safety; and Vocational Guidance.

There is one staff member in the Harrisburg office of the Bureau for each of the following: Continuing Education; Home and Family; Health; and Guidance. There are six staff members in Harrisburg for Civil Defense. In Manpower Development and Training there are five in Harrisburg and four in the field.

Section III
Organization of the Administration of Vocational-Technical Education

Lack of Uniformity in Field Supervision

It is readily apparent that there is little uniformity among the several services either in organization or function. Each service deploys its field representatives on different bases, and assigns different territories and functions. This may have been justified when the services were established, but no longer. In the whole process of translating legislation and State Board policies into classroom excellence a particularly sensitive and critical spot is the point of contact between State staff and local administration. The present assignments of field personnel completely ignores the tactical and strategic importance of this contact.

Why should a local administrator who wants help in activating a broad program of vocational education have to consult with so many people from so many different places with so many different forms providing State or Federal assistance in so many different patterns when the basic objective of each program or curriculum is the same? Taking a mythical but not a typical case: for assistance in establishing or improving a program in Agricultural Education the local administrator contacts an Area Supervisor in an adjoining county superintendent's office. For assistance in establishing a program in Business Education he contacts the one State Supervisor in Harrisburg. For assistance in Distributive Education he contacts Temple University or the University of Pittsburgh. For Health Education he contacts Harrisburg. For Homemaking Education he contacts the county superintendent in his own county. For help with Technical Education he calls or writes an Area Coordinator (provided he knows which one) at either the University of Pennsylvania, Pennsylvania State University or the University of Pittsburgh.

If the local office of the Bureau of Employment Security presents him with an urgent need for some retraining under the Manpower Development and Training Act, he does not know whether to call Harrisburg, or the Division of Vocational Education in one of the three universities named above. This does not recommend itself as good organization.

New legislative developments, which will accelerate under the influence of Public Law 88-210, emphasize the inadequacy of this organizational pattern. A local administrator seriously trying to meet the training demands of his community will see a need for an increased number of programs which involve two or more of the vocational services. Let us suppose, for example, that a new program involves Technical Education and Distributive Education. Does the administrator send his application to the Trade and Industrial Area Coordinator at the University of Pittsburgh; or to the Distributive Education teacher-educator at Temple University or the University of Pittsburgh; or does he apply to both the Trade and Industrial Area Coordinator and the Distributive Education teacher-educator; or does he apply to the State Supervisor of Distributive Education in Harrisburg; or does he apply to the State Director of Technical and Continuing Education in Harrisburg?

Then, in the matter of funds, does his district receive State reimbursement according to the Trade and Industrial formula, or the Distributive Education formula, or the Area Vocational-Technical School formula for Trade and Industrial, or the Area Vocational-Technical School formula for Distributive

Education, or a combination of all four? The fact that in Trade and Industrial one factor in reimbursement provides $35 Average Daily Membership and another provides up to $110 ADM, and in Distributive Education one factor provides $50 ADM and another provides up to $125 ADM makes the problem no easier on his bookkeeper, or his conscience.

Weakness in Bureau of Organization

The organizational chart under which the Bureau is supposedly operating at present does not present an accurate picture of intra-Bureau relationships. It does indicate a questionable factor in the Bureau's operation, i.e., the functional approach to organization. This does not seem to be the best approach in terms of the present problems of the Bureau. The chart indicates the following functions reporting to the Director of the Bureau:

1. Family, Migrant, and Nursing Education.
2. Agriculture, Business, and Distributive Education.
3. Technical, Military, and Industrial Education.
4. Manpower Development and Training.
5. Continuing (Adult) Education.
6. Farm and Home Safety.
7. Vocational Guidance.

There are at least ten people reporting to the Director rather than the seven indicated on the chart. For example, there is no one individual responsible for "Agriculture, Business, and Distributive Education." Each of these services is headed by a State Supervisor who is largely autonomous and who administers his part of the total program with little concern for the other part. Lack of real cooperation between the services at the state level is unfortunate. At the point of contact with local administration it is unforgiveable. If it is necessary that a local administrator work with representatives of ten different services, then these representatives should be under much closer coordination than seems now to prevail.

Suggested Bureau Organization

In reorganizing the Bureau of Technical and Continuing Education, the objective is to provide maximum effectiveness in translating State Board policy into educational services for the local districts and then keeping the Board informed on developments and needs in the local districts to serve as a basis for the modification and/or additional formulation of policy. In order to achieve this objective, the organization must devise staff assignments and intra-staff relationships which make it easy for each staff member to do his best work.

The present functional grouping does not provide what is needed. It is unwieldy at the top and confusing at the point of contact with local administrators. Too many people from too many places have too many rules and regulations peculiar to their individual services. Each one requires that the local administrator learn a new language. Each service has its own area office, its own reimbursement patterns, and its own forms on which the local district must make reports. This is confusing and irritating enough when the programs involve only one of the services. When a program involves two or more services, such as Agriculture and Distributive Education, then additional problems are raised in the processing and approval of the application and in the auditing of the reports covering the program.

The number of these combination programs involving two or more of the services will undoubtedly increase as area vocational-technical schools and community colleges increase in number and size. Ways must be found for simplifying the mechanics of State and Federal participation in the local programs. State staff in all services should start thinking in terms of vocational-technical education rather than in terms of the traditional services of Agricultural Education, Distributive Education, Homemaking, etc. A good place to start would be in agreeing on one simplified pattern of reimbursement and of State-local cooperation in the providing of the kind of vocational-technical education needed in the local districts.

The recent legislation has paved the way for marked improvements in the Commonwealth's educational programs. What the movement needs now is muscle and direction. Much of the muscle must be provided by the General Assembly. The direction must be supplied by the State Board of Education and a reorganized Bureau of Technical and Continuing Education within the Department of Public Instruction. The proposed reorganization is intended to facilitate the provision of this necessary leadership and direction.

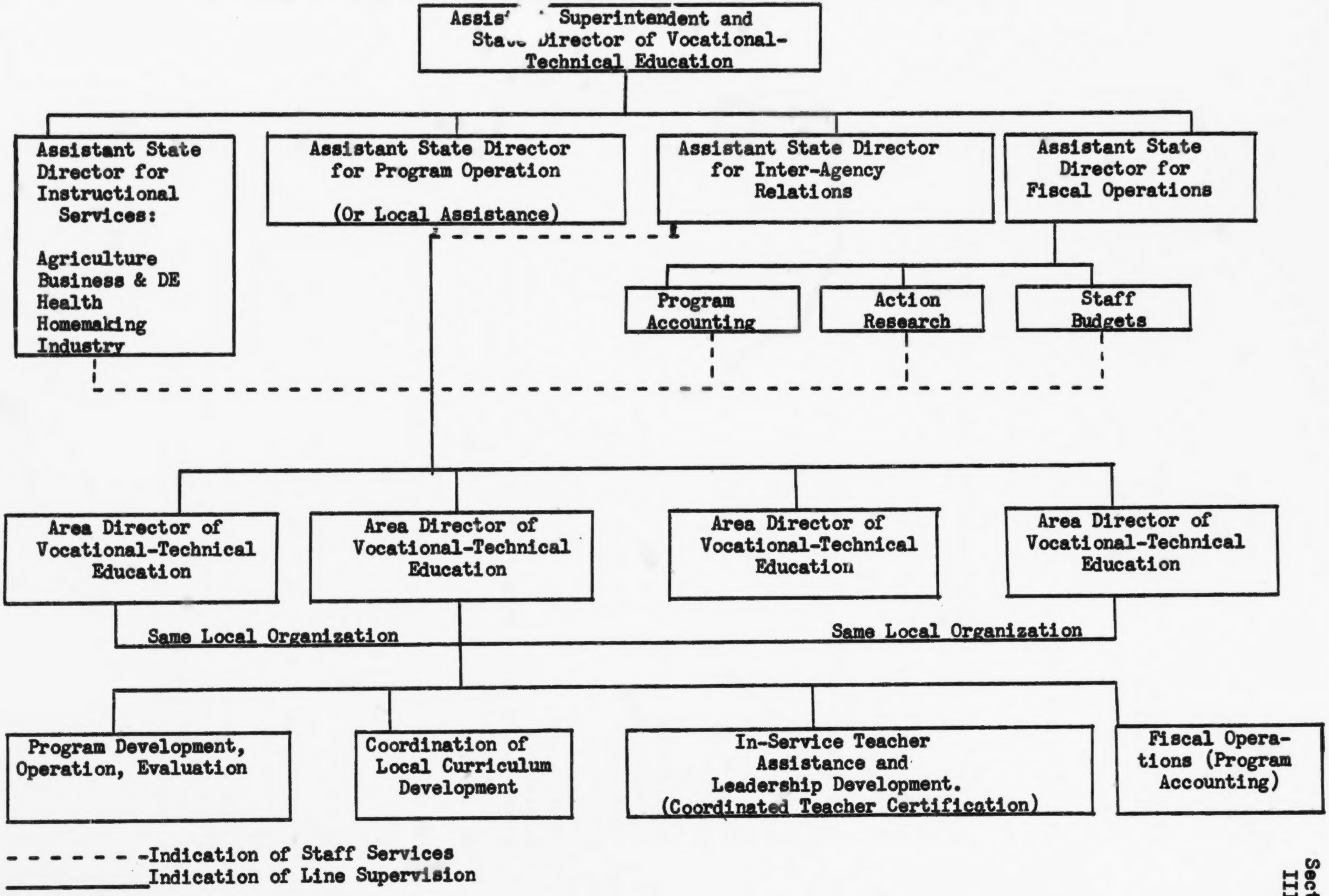
The New Organization, Services and Positions

The proposed organization chart for the current Bureau of Technical and Continuing Education appears on the following page. It will be noted that the title and level of authority have been changed to the Deputy for Vocational-Technical Education.

Some of the services and positions suggested are new. Others represent a regrouping and extending of existing services. Some of the positions will have to be filled by added personnel. Others can be manned by transfer and reassignment.

The basic pattern of the new organization involves the establishing of four regional or area offices, each headed by an Area Director. At the State level there are four Assistant State Directors, three of whom are Staff officers and one who is the line director of the area services. General descriptions of the proposed positions follow.

Proposed Re-Organization of the Bureau of Technical and Continuing Education


Assis' Superintendent and State Director of Vocational-Technical Education
Assistant State Director for Instructional Services:
Agriculture
Business & DE
Health
Homemaking
Industry
Assistant State Director for Program Operation
(Or Local Assistance)
Assistant State Director for Inter-Agency Relations
Assistant State Director for Fiscal Operations
Program Accounting
Action Research
Staff Budgets
Area Director of Vocational-Technical Education
Area Director of Vocational-Technical Education
Area Director of Vocational-Technical Education
Area Director of Vocational-Technical Education
Same Local Organization
Same Local Organization
Program Development, Operation, Evaluation
Coordination of Local Curriculum Development
In-Service Teacher Assistance and Leadership Development. (Coordinated Teacher Certification)
Fiscal Operations (Program Accounting)
Indication of Staff Services
Indication of Line Supervision

Section III
Organization of the Administration of Vocational-Technical Education

State Director of Vocational-Technical Education: This position should be raised to the level of Assistant Superintendent and should be given some form of line supervision over the vocational-technical programs in the community colleges.

Four Assistant State Directors would constitute the State Director's cabinet which formulates and administers Bureau operating policies. Responsibility for every function of the Bureau is assigned to one of these Assistant Directors.

The Assistant State Director for Program Operation would be the line officer charged with the supervision of the field staff through four Area Directors. Through them he would direct all operational contacts with local districts. The other three Assistant Directors would provide staff services to the operation of the program.

The Assistant Director for Instruction Services would be responsible for the Bureau's activities in the development of curriculum and in the implementation of curricula with instruction materials and teaching aids. Curriculum development in the local districts would be coordinated and supplied with consultative service by personnel from one of the area offices under the supervision of the Area Director. The Instruction Services group would provide staff assistance in these local operations.

The Instruction Services staff would include specialists in Agriculture, Business and Distributive and other occupational areas. In addition to these staff members, budget should be provided for the temporary employment of experts in specific subject matter areas as well as non-educator experts in such fields as the communications media, etc. The Instruction Services group would function through (a) the operation of one or more instruction materials laboratories, possibly a central state laboratory with a branch in each of the areas; (b) by assisting local districts in their programs of curriculum development; and (c) through contractual arrangement with colleges, universities, or commercial producers.

The Assistant Director for Inter-agency Relations would bring together many miscellaneous duties which have previously been performed with "spare time" attention by many staff members. There has not been a coordinated program focused on mutual objectives. The State Director has been too busy with too many things to give full direction and the staff members have not articulated their individual efforts. These efforts have been meager concerning the importance of cooperation between bureaus within the Department and contributory agencies outside of the Department.

Education is no longer something insulated from the market place, isolated in the little red school house. It is an instrument of government policy. It is a tool for research, production and survival, as well as an influence for better living. As such, it cannot work alone.

Section III
Organization of the Administration of Vocational-Technical Education

Vocational-technical education even more than any other phase of the total education program must function in cooperation with other State and Federal agencies, State and local Chambers of Commerce, research groups, organized labor, employer associations, and all the other factors in the complicated economy of the Commonwealth. Somebody on the staff of the State Director of Vocational-Technical Education should maintain liaison with all these groups, should participate in cooperative planning, and should advise the Director on the commitments of Bureau effort in inter-agency projects. The major duties of this staff function group themselves rather naturally into those concerning relationships involving relationships with governmental agencies concerned with education, and those involving relationships with employee and employer groups in industry and business. In the beginning, this might be a one-man operation; but as programs develop, there will be a need for an assistant in each of these three general fields.

The Assistant Director for Fiscal Operations should pull together all of the scattered activities related to program and pupil accounting and the setting and administering of staff budgets. Considerable detailed research will be needed in order to identify these operations and to develop uniform and simplified procedures. When this is done, a program of action research can be instituted utilizing the data available from program accounting and pulling together usable information that will assist in further educational planning and will be a good tool for evaluating programs and making improvements in on-going programs.

Action research is understood as only that which can be done with and from data that are or can easily be made available from the program accounting process. Other types of research should be the function of the Assistant Director for Instruction Services if it is on a statewide basis; or if it is limited to an area, of some staff member in the area office.

The Area Directors of Vocational-Technical Education are in some ways key men in the proposed organization. Each of them would provide, in his geographical area, the one point of contact for all local administrators, coordinators, board members, and others who are interested in some project in vocational-technical education in the local district. The Area Directors would provide the line organization which would translate State Board policy into educational output. They would be the individuals to whom the State Director, through the Director of Program Operation, would look for results.

Possibly the number of area officers should be more or less than four. The determination here will take more study. As a basic principle, there should be enough of these offices for each of them to be close to the local administrators. There should not be more than can be adequately staffed. Necessary staff will vary between the geographical areas, but the following norm is proposed.

At least five specialists in program development, operation, and evaluation would approximate that generally being done now by the area coordinators. The staff should include at least one representative of each of the five major subject areas---Agriculture, Business and Distributive Education, Health, Homemaking, and Industrial. Depending on the number and size of programs, several additional representatives might be required in some subject areas. However, the total number would be fewer than now needed in field services. In order to increase the flexibility of the staff and in some cases to reduce the number of contacts which the local administrator will have to maintain, these specialists should, as time goes by, inform themselves on each other's duties so that they will tend to become generally informed in the field of vocational-technical education. Perhaps at a later time staff specialists will not be required in each occupational area.

An adequate fiscal operations and accounting staff within the area office would transfer from program supervision much of the tediousness which now seems to make it necessary to keep the programs separated into the occupational categories.

There is some feeling that area office staff might include a specialist in the operation of Manpower Development and Training programs, but here again a well trained fiscal operations unit could absorb most of the peculiar accounting necessities of this program so that it would not require the services of a supervisory specialist in each area office if the other subject areas were adequately covered. The source of funds should not be as important in supervision as is the type of course offered.

The coordination of local curriculum development would probably not require the services of more than one professional staff member on a full-time basis. It is assumed that he could borrow from or get staff assistance from the State Instruction Services group for special projects which would require additional manpower. He should also have a budget for the temporary employment of specialists in specific subject areas when these might be needed.

In-service Teacher Assistance and Leadership Development could probably be handled by one professional staff member on a permanent assignment. He would receive assistance, when needed, from the State Instruction Services group or from the teacher-educator centers. He should also be provided with a budget for temporary employment of specialists as needed.

Fiscal Operations and Program Accounting should have a strong unit in each office. This would make a surprising contribution to the total effectiveness and efficient operation of the area director's staff. Too much time is now spent by professional personnel on detail which could be handled by a statistical clerk under good professional supervision. The supervisor of this unit should either be selected from the staff of the Assistant State Director for Fiscal Operations or should be trained in that office. He and his unit would then assume responsibility for all records, reports, and accounting required by the State office. This would include budget control, pupil accounting, and the collecting and organizing of data needed in action research. His work would be coordinated through channels with related bureaus in the Department of Public Instruction, in order to avoid duplication of effort.

The specific services to be provided by each of the area offices would include all of the administrative, evaluative, and developmental functions outlined above. In addition, a study should be conducted of the peculiar needs of each area and services should be provided which are most needed by local administrators in order to bring to the young people of the Commonwealth the type and quality of education which will best prepare them for satisfying and productive participation in the Commonwealth economy. Many of the studies and local evaluations of educational needs discussed in Section II of this report should be performed and/or coordinated by the area offices of the Bureau of Vocational-Technical Education.

SUMMARY OF RECOMMENDATIONS

1. The State Board of Education should have independent supervisory, planning, and administrative authority over the Department of Public Instruction.

2. The State Board should be the appointing authority for the Department of Public Instruction.

    a. The State Superintendent should be appointed by the Board.

    b. Assistant Superintendents and Division Chiefs should be appointed by the Board. All other DPI Staff should be nominated by Assistant Superintendents or Directors and appointed by the Superintendent.

3. The Bureau of Technical and Continuing Education should be reorganized and headed by the Director of Vocational-Technical Education at the Assistant Superintendent's level and should establish the Staff, Line, and Regional organization recommended in this section.

4. The State Board and the Superintendent should move immediately to close the gap between the administration and supervision of vocational-technical education in the community colleges and in high schools and area vocational-technical schools in order to provide a continuum in vocational education from the junior high school through the 14th year. The importance of sound articulation in this area indicates that the supervision of all vocational-technical education should be assigned to the State Director of Vocational-Technical Education.

5. In order to meet the need for local directors of vocational education who understand the new demands which society must make for skilled manpower in trades, services, and technical occupations, the State Director of Vocational-Technical Education should activate comprehensive programs for briefing existing directors and for training potential directors. Such programs should include:

    a. In-service workshops for present directors.

    b. Strengthening the present program of training directors by a program of internship under which candidates for directorships and other supervisory positions could spend a year in leadership positions under the joint sponsorship of experienced local administrators and DPI representatives.

c. Short-unit courses or workshops in the newer teaching technologies.

d. Study of problems and methods involved in the articulation of vocational technical courses from junior high school through the community college.

e. Study of the problems and methods involved in establishing a relationship between vocational-technical courses, general education or liberal arts courses, and university preparatory courses which will result in a total program producing better educated graduates.

f. Study of additional needed legislation.

6. The State Director should activate a committee composed of representatives of all divisions and vocational services to review vocational reimbursement patterns and reporting mechanics and to devise one pattern that could be followed by all vocational services and in all levels of vocational education. Legislation, as required, should be proposed.

7. The State Board and the State Director should launch a well financed and ably manned program of curriculum development and production of instruction materials to be conducted in close articulation with the needs of local districts and in close cooperation with interested agencies in agriculture, business, and industry.

8. The increasing interrelationships between vocational education, other governmental agencies, and business and industry requires that the State Director add to his staff someone with the full-time responsibility of providing liaison with these agencies and groups.

9. The objectives of field supervision and the functions of field supervisors should be evaluated in the light of current educational patterns and needs. Traditional alignments of subject matter areas must be revised to meet present day objectives and the needs of students, employers, and educators. Department and district staffs must be trained to function under this broadening concept of service.

Although all the above recommendations relate to how a reorganized vocational-technical administration should function, they should be implemented whether the Bureau of Technical and Continuing Education is reorganized or not. All, except recommendation three (the actual reorganization), are discussed in more detail in later sections.

SECTION IV

PRESENT PROGRAMS AND PLANNING

The employment and demographic data presented in Section II support the findings of several Commonwealth studies which have been made in the last four years. Many such studies and reports by school districts, legislative committees, the Department of Public Instruction, Chambers of Commerce, Industrial Development Associations, and others have cited the need for more technical training, more public support of education and systems of post-high school education. They have emphasized the need for the retraining of the unemployed, the up-grading through education of the employed, and the training of in-school youth to assure them of better opportunities to find employment and to make their places in the economy of the Commonwealth. In addition, several of the studies have presented evidence at both the high school and post-high school levels would tend to attract new industry to Pennsylvania.

Thus, the social and economic need for the improvement and expansion of the vocational-technical education in the Commonwealth has become obvious and accepted. Present efforts have not been meeting the needs since, as reported by the Department of Public Instruction, the number of students enrolled in vocational-technical programs has not changed materially for several years. This certainly is not meeting the needs of the commonwealth, of industry, or of the large majority of students who need, and in most instances want, more and better occupational-vocational-technical training.

Responding to these evidences of need, the 1963 session of the General Assembly passed three enabling acts which, with adequate financing and administration, should make possible the extension and improvement of vocational-technical education in Pennsylvania. These Acts are:

1. Act 463 "Amending the act of March 10, 1949 (P. L. 30),...providing for vocational-technical education and technical institutes, providing payments on account thereof, and authorizing the Department of Instruction to grant priority to applications for area vocational-technical schools."

2. Act 484 "Providing for the creation, establishment and operation of community colleges,...." In order to win approval a community plan for a college must include a survey of industrial developments, manpower needs, and "the means by which the community college program and curriculum shall further industrial development, reduce unemployment and improve employable skills of residents of the area to be served by the community college."

3. Act 299 "Amending the act of March 10, 1949, (P. L. 30) ... and deleting and repealing the provisions of 'Act 561' which required the reorganization of school districts." In some respects Act 299 is a retreat from Act 561 but it does provide for reducing the number of school districts and increasing their potential for offering adequate programs of education.

In the main these are good acts, when considered separately. Their cumulative impact could have been greater had they been conceived and written as supplementing facets of enabling legislation for vocational-technical education. There is an unfortunate lack of articulation between their provisions. For example, both Acts 463 and 484 provide for post-high school technical institutes with no delineation of differences between the services which may be offered. True, Act 463 provides for such institutes in only the Class I and Class I-A counties, but it seems to provide for the offering of post-high school courses which might approximate the curricula of a technical institute or a technical department operated in a community college. For an experimental period it may not be bad that both acts provide such courses, but the purposes of each should be stated more completely and the provisions of the two acts should be brought into harmony.

Act 299, providing for the redrawing of district boundaries and the formation of larger districts, does not directly conflict with either of the other acts but it does not seem to have been designed with the purposes of the other two in mind. Minor differences can probably be resolved by close cooperation between the three responsible bureaus in the Department of Public Instruction, if such cooperation can be maintained. There is no evidence of unwillingness to cooperate. Nor is there much evidence of day-to-day working together. In approving attendance areas for area vocational-technical schools the Bureau of Technical and Continuing Education recognizes the boundaries set by the Bureau of School District Organization and does not split 299 districts. But there is no collaboration in the research that goes into setting standards and fixing boundaries.

This lack of articulation is unfortunate in three acts which have so many common purposes and in the long run it is possible that Act 299 could contribute as much to vocational education as will the other two acts. (This is based on the premise, developed in Section V, that any high school large enough to provide really adequate general and academic education is large enough to provide much of the occupational preparation needed by students who enter employment upon high school graduation.)

WEAKNESS IN HIGH SCHOOL PROGRAMS AND PLANNING

An adequate program of vocational-technical education should provide appropriate occupationally oriented education at all grade levels from junior high school through the 14th year. The junior high program should be directed at guidance and exploratory experiences. Actual occupational preparation should be provided in the high school for those students who will not continue their education beyond high school, or who will pursue vocational curricula in post-high school institutions.

Herein lies a weakness in the planning now being done in Pennsylvania. Too little attention is being given to the possibilities of providing vocational-technical education in the comprehensive high school. Understandably the Bureau of Technical and Continuing Education, responding to the passage of Act 463, is devoting major efforts to the development of area vocational-technical schools. Other possibilities must not be overlooked. Granted, the high school programs are not doing the job which must be done. But does this mean that the job cannot be done in high school? Could it be that the present high school programs need to be revised? Could it be that the particular amalgum of which they are composed does not properly combine job training and education?

Section IV
Present Programs and Planning

A recent report to the Governor made by the Bureau of Technical and Continuing Education does point out that the existing programs in the high schools need to be evaluated and either revised or discontinued if they are not achieving the desired objectives. It does also mention "occupational preparation" as one type of vocational education which should be considered, but it uses the term to refer to low grade, single skill training rather than to the broad introductory preparation for jobs which the term is more and more being used to indicate in educational experiments around the country. These experiments constitute one of the most promising developments in vocational education today. They are establishing the feasibility of effective programs of occupational preparation in the comprehensive high school.

Another disturbing thing about the high school programs and the planning in Pennsylvania is the attitude or philosophy, which was current back in 1917, that vocational education in concept and in operation is something apart from the non-vocational phases of the educational program. There is this traditional lack of co-mingling even when the vocational school and the high school are located on the same campus. One director of a vocational school contacted during this study seemed rather amazed when he was asked if any of his students walked across campus to take special courses offered in the high school. "Why should they?" he asked. "They have everything they need here." Two other vocational directors expressed the same concept in slightly less direct terms. This is contrary to most of the thinking now current among both general educators and vocational educators. Most of the support for the comprehensive high school is based largely on the social advantages accruing from having the students all together. More and more educators believe that students preparing for all employment and social objectives should be associated with each other, should know each other, and should have the experience of being together on a campus. More and more, special purpose schools are becoming more comprehensive and serve larger segments of the student population.

These are unquestionably sound reasons for the comprehensive high school; but there may be another reason equally important which deserves more study. Some of the pilot programs in occupational preparation at the high school level are accumulating considerable evidence that education and occupational preparation have a lot in common and that each can take strength from the other. This manifests itself in several ways. Consider, for example, mathematics. The math needed in many of the occupations which may be entered by high school graduates turns out to be about the same math which is needed to complete the general education requirements at the high school level. The content, at least, is very much the same. The method of teaching may be different. Teachers who are skilled in the teaching of vocational students seem to be able to present mathematics, as well as some of the other related subjects, in a manner with which the vocational student more readily identifies and with which he works more comfortably. The teacher uses the student's vocational interest as a motivation factor. Confronted with a practical problem in the shop or laboratory which involves a mastering of math, a student will learn math; and as he comes to feel at home with it, he becomes a more self-confident mechanic, a better mathematician, and a better educated individual. The student's state of mind is the biggest single factor in his total environment. Vocational-technical students seem to bear this out as they blossom forth as a result of the subtle changes in their states of mind which come from the experiencing of success in school subjects which they formerly considered difficult.

WEAKNESS IN THE AREA VOCATIONAL-TECHNICAL SCHOOL

Excellent progress is being made in the implementing of the provisions of Act 463, or at least in the approval of attendance areas and plans for area vocational-technical schools. Section II lists the many such districts which have been approved in most of the counties. This looks good and the advocates of these schools contend that they are designed to take care of the two basic purposes pointed out in the preceding paragraphs, i.e. providing the students with the social advantages of remaining in their home high school while at the same time affording them occupational preparation. In the main, the schools seem to be accepted by Pennsylvania educators as adequate. Undoubtedly, they will make a significant contribution to the development of a vocational-technical program in the Commonwealth.

In spite of all this, however, there are some rather serious questions as to whether the area vocational-technical school concept can deliver all of the educational advantages which its proponents claim for it.

The basic concept of the area school has little support in education experience with such systems across the country. There is little evidence to support the concept that a sufficient number of high school students can be persuaded to attend two schools simultaneously. It has worked well in a few places, not so well in others. The experience of the area vocational-technical schools now in operation in Pennsylvania does not remove this doubt. Studies of manpower needs, student interests, and educational planning indicate that approximately one-half of the students in high school should be provided with some sound occupational training, but the average enrollment in the area schools now operating is less than five percent of the total high school enrollment in the feeder districts. This would certainly indicate that before the Commonwealth's hopes for vocational-technical education are pinned too exclusively on the area vocational-technical school, much additional study must be done to determine the validity of the basic concept except as a skill-center adjunct to vocational programs in comprehensive schools.

Another question which should be studied in depth is whether much of the education now planned for the area vocational-technical school could be achieved in the larger comprehensive high schools.

Can the area vocational-technical school in actual operation be made to provide a really adequate education for its students? Basic to the success of any vocational-technical education program is the requirement that it be a part of the student's total education program. As has been suggested elsewhere in this report, the success of the program here hinges to a considerable extent on some rather subtle relationships in the method and effectiveness of teaching related subjects. The math must be job-related math or have job-related application and it must be taught so that it can be acquired and understood and used by the mechanical minded or the nonacademic minded student. At the same time, it must have sufficient content to be accepted as a "solid" subject required for high school graduation. Unless this objective is achieved, the vocational student may not have time for all of his "solids" and for his vocational classes.

This has always been difficult to achieve but success seems to have been greater where there is an interchange of instructors between the vocational and non-vocational phases of the education program. Utilization of the team approach in the development of instructional materials may provide a possible answer. This could be done, of course, in the area vocational-technical school pattern; but it is not being done at the present time and there is little apparent likelihood that it will be done. It seems less likely to be done in the area vocational-technical school than in a comprehensive high school.

Is too much time allocated in the area vocational-technical school to the development of manipulative skills? This is a basic question. Further study is needed to provide objective evidence for determining the best time division. There is general consensus that vocational education should absorb one-half of the school time in those years when the student is taking a vocational course. But how many years should this be? All the high school years? Two years? One year? It depends on the curriculum, but few of the jobs open to high school graduates demand or justify more than two years and many can be learned in one year or less.

And what about the division of time between manipulative training and instruction in related technical subjects? Here again it depends on the curriculum, and the job competencies required for employment. In the more technical curricula in the area schools the time division seems about right. In the less technical curricula where related subjects and general education tend to overlap further experimentation is needed.

While scheduling is a minor problem and should not be allowed to interfere with the education of students, it does present a hurdle in building attendance in area vocational-technical schools.

What about the logistics of bussing students from feeder high schools to area schools and back again? Over a long period of time, does not the expense of the transportation eat up some of the advantage which originally accrued from avoiding the duplication of some laboratory and shop equipment? Perhaps the working out of Act 299 will result in larger high schools which would diminish the economic advantages of the area vocational-technical school, except as a high level skill center.

Is it safe to assume, as the statement on Standards for area vocational-technical schools does, that a combined high school enrollment of 2,500 will provide an area school with 500 students? In order to attract 20 percent of the feeder high school enrollment the area schools will have to multiply their present drawing power by four or five. Enrollments are not developing as expected. It is becoming increasingly difficult to get students to spend so much time in travel to a second school.

The planning for the expansion of the educational program includes no provisions for developing either the instructors or the administrators and supervisors necessary for success in as extensive a program as is planned. Qualified people in these job groupings are already scarce in Pennsylvania and unless some kind of crash program and some kind of long-term program are developed for training them, leadership is going to become critically lacking.

The current planning does not provide for the development of the kind of instructional materials which are indicated for success in the new schools or for exploring and perfecting new teaching methods which will achieve the desired new educational goals more effectively. Present provisions for teacher education will not be adequate for developing able personnel in the numbers needed. Teacher education institutions and personnel are not in all cases attuned to the new needs and are too frequently inclined to feel that the needs can be met by merely doing more of what has been done before in teacher education. This is an unsound assumption.

The planning does not include overt efforts at articulation between the home high schools, the area technical schools, and the community colleges. Major efforts should be made immediately in the local districts, in the legislature, and in the Department of Public Instruction for coordinating the objectives and articulating the programs in these several types of schools and at these several grade levels.

Act 463 tends to discriminate against those school districts which have been operating vocational-technical programs except in cities of Class I or I-A. Many cities of the second class have operated fairly adequate, and in some instances very good, vocational programs. These cities now face the problem of combining with a larger geographical area to form an AVTS district and in some instances friction has developed between city districts and county districts which is very detrimental to either continuing or developing a sound area program. Legislative adjustment is necessary to allow good on-going programs to continue and to expand, whether such expansion is on a comprehensive basis, or as technical institutes.

QUESTIONS ABOUT THE TECHNICAL INSTITUTE

The concept of the technical institute is sound. It articulates with the high school and the area vocational-technical school to provide the continuum in vocational-technical education which is necessary to prepare workers for the many entry levels in employment. If it is authorized and financed to operate statewide, it can make a major contribution in the development of manpower skills. There are, however, a few questions which arise in considering the standards proposed by the Bureau of Technical and Continuing Education for State Board approval.

Are the standards too industrially oriented? They do state that the curriculum shall include "agriculture, business, distribution, home economics, health services and trade and industrial education" but consideration of the types of students to be served concentrates on industrial education graduates from high school even though other students are mentioned. In addition, it appears that instructor qualifications are considered primarily in terms of trade and industrial certification as are the requirements for principal or director. This does not actually limit the administration to trade and industrial personnel, but in practice it tends to.

The broadening of the program in the technical institute to include all fields of vocational-technical education poses a serious problem in administration and supervision. Pennsylvania, like most of the other states, does not have an adequate program for the developing of administrators who can direct the total program of vocational education. Almost without exception, the currently working administrators came up through either agriculture, business, or distribution, or trade and industrial education; and they do not feel at home outside of their own service. At the present time, one of these subject area specialists can be certificated in vocational education upon the completion of four college units of an orientation nature. This is just one example of the grave need for a restudy and revision of the total vocational certification standards. It also points up the necessity for some changes in present programs of training teachers and administrators. The most pressing need is for devising and activating workshops or programs of study and work experience which will assist present teachers and administrators in orienting themselves to some of the new programs.

Current planning and proposed standards indicate that the institutes must provide full-time curricula and may offer part-time programs and individual courses. This implies a low priority on the kind of courses needed in the retraining of unemployed because of technological change or a decline in the business being done in the district. In areas of concentration of industry and business the out-of-school youth and adult attendance in the technical institute might exceed the full-time enrollment, and their needs should be given equitable consideration.

The proposed policy on faculty standards and professional requirements raises several questions. Who are the academic faculty and what do they teach in a technical institute? Neither the statement on curriculum nor the statement on types of students served indicates that there will be many "academic" subjects taught in the technical institute. It will accept high school academic graduates, but it will provide them with "intensive job preparation education."

If "academic faculty" means teachers of related subjects, then why should their qualifications be so different from instructors in laboratory courses. Particularly in the more technical subjects, any differentiation between laboratory instructors and related subjects instructors becomes suspect. In fact, the idea of having one set of instructors or one kind of instructor in the laboratory and another set of instructors or another kind of instructor in the classroom is probably unsound. The intricate relationships between laboratory learning and classroom learning cannot be maintained for the student if one instructor stays always in the laboratory and the other stays always in the classroom. Maybe the best solution lies in the team teaching approach in which the instruction is planned by a team and is presented to the students by a team with each member of the team doing that which he does best.

In connection with teacher requirements, we question why three years of satisfactory teaching experience should be required. The teacher of three years experience would have to come from a high school or possibly an area vocational-technical school and would be unfamiliar with the teaching situation in a technical institute. A beginning teacher who had been specially trained for instruction in a technical institute might be better qualified than an experienced teacher who had been working with high school students in a high school situation.

The proposed policy on facilities is not sufficiently definitive. More consideration must be given to what is meant by "adequately equipped" and physical facilities standards must include more than that they shall meet regulations concerning fire, safety, sanitation, heating, lighting, and ventilation. There is a safeguard in the approval by the Department of Public Instruction through the Bureau of Technical and Continuing Education. The weakness here, however, is that Bureau personnel have not had intensive training in the newer methods of planning educational facilities. Such training should be provided those individuals who are to inspect facilities and/or plans.

The provisions on program approval predicates an annual review. Presumably this review would be made by the staff of the Bureau of Technical and Continuing Education; but if the technical institute does spread beyond the present two counties, anything approaching an adequate review of each program annually would tax the staff of the Bureau beyond its capacity. More manpower, and, therefore, more financing, would have to be found somewhere. In the same way, the evaluation program proposed is excellent but it is also expensive. It will require generous support from Federal, State, and local sources. And standards must be set by further study and research.

Another serious question that faces the technical institute in its growth and development is its relationship to the technical division of the community college. If the two institutions can agree on different but compatible objectives, then there is room for great development in each. Or, if they agree on the same objectives but want to approach them by different methods, there is still room in the education complex for both institutions, A certain amount of competition between the two institutions might even be healthy during the developmental period if it is controlled at the top. If the community college develops status, this might make the technical institutes try harder; and if the technical institutes give their students a good practical education, this might help the community colleges to work at the fulfillment of their possibilities as a unique institution and forget blind imitation of higher education.

VOCATIONAL-TECHNICAL EDUCATION IN THE COMMUNITY COLLEGE

Commonwealth experience with technical education in public junior colleges is too limited to provide a reliable prognosis of its success or direction. Any evaluation then must be based on a study of Act 484 and the regulatory bulletins issued by the Department of Public Instruction. The Act is concisely drawn and permits the development of vocational-technical programs to meet forseeable needs. It could be improved by a few changes; but these can be made as the need for them becomes obvious and pressing. It attempts to insure emphasis on technical education by providing (Section 14 (c)) that not more than 30 percent of the State funds may be spent for "capital investment and operating cost for liberal arts programs in community colleges." Taken in context, this seems to mean that 70 percent of the State funds shall be spent on technical programs. The Act also provides in Section 2 (5) that any plan for a community college submitted to the State Board for approval "shall include a survey of any industrial development and manpower needs of the area and of any vocational and occupational shortage and the means by which the community college program and curriculum shall further industrial development, reduce unemployment and improve employable skills of residents of the area to be served by the community college."

Some of the provisions of the Act which should be changed or studied for evidence of a need for change are:

1. Section 5, the election or appointment of members of the Board of Trustees of the community college. Why should not the members of the Board of Trustees be elected by vote of the people in the attendance area?

2. Section 9, tuition. The provisions of the Act in this section penalize those students who do not live in areas served by community colleges. If equal educational opportunity is to be brought to all students of the Commonwealth, then the district of origin of the student should assume the tuition obligations so that any student from outside the community college attendance area would be able to attend without paying any more tuition than those students from within the attendance area.

3. Section 10, taxation. The Act provides that the tax limit for cities, districts, and counties of the first class shall be one mill and for others five mills. Experience will determine whether or not these maxima are too low. We believe there should not be such a difference in allowable rates for different sized counties; but this must be determined later in relation to the over-all study of State aid to counties and districts.

4. Section 10 also perpetuates the weakness of retaining the local sponsoring districts as the tax levying authority rather than placing this authority in the hands of the community college Board of Trustees.

The regulatory bulletins prepared by the Department of Public Instruction are not so concisely drawn as the Act and their provisions and regulations concerning technical education are less readily assayable. There are three of them:

"Standards, Rules and Regulations for Public Community Colleges in Pennsylvania,"16 pages.

"Criteria for the Establishment of Community Colleges," 26 pages.

"Guidelines for Preparing Applications for the Establishment of Public Community Colleges,"39 pages.

These bulletins are commonly referred to as "Standards," "Criteria," and "Guidelines" respectively. Neither the titles nor the contents are mutually exclusive. Most of the topics pertinent to the establishment and operation of a community college are treated in two or more of the bulletins. Except for quotations, the treatment of these subjects is likely to be different in each of the different bulletins and this leads to confusion sometimes rather than to reinforcement. In the main, though, the bulletins do reflect accurately the provisions and intent of Act 484 and they are in keeping with the national trend in the development of community colleges. There are ample references to and quotes from the Act's provision for technical education. "Guidelines" quotes twice the provision that not more than 30 percent of State funds may be spent on liberal arts programs. Repeated statements about purpose, function, and curricula generally include the mention of technical courses, courses for out-of-school youth and adults, and community services. In spite of all this, however, vocational educators may find a few places which incite apprehension.

"Criteria for the Establishment of Community Colleges"

This bulletin selects four national trends apparently to serve as guides in the development of community colleges in Pennsylvania. The trends and some comments may be pertinent. The trends are quoted from the bulletin as is the above title.

> "A. Existing colleges are becoming more comprehensive and newly established ones are almost always of the comprehensive type."

This is an acknowledged trend. It is sound and the authors of the bulletin have followed it in setting out their criteria.

> "B. There is a tendency for community colleges to move away from secondary school influence toward recognition as institutions of higher education."

This may be an accurate statement, but it is not a happy one. It depends somewhat on the meaning attached to "secondary school influence." Two statements the bulletin makes indicate a sound position in this connection. They are worth quoting.

> "The State Board of Education, and the State Department of Public Instruction, shall, by means of their respective subcommittees and divisional staffs, plan cooperatively a statewide program of technical and vocational education which will coordinate and efforts of high schools, area vocational schools, technical institutes, and community colleges to the end that the needs of youth and adults will be met as fully as possible, but with minimum duplication and conflict of interest."

> "Statewide planning for technical and vocational education shall be accomplished in coordination with statewide planning for higher education, to the end that community colleges on the one hand, and area technical schools on the other, may be assigned their proper roles in the orderly development of occupational education within the commonwealth."

The position expressed by these two statements is unassailable, but why does it appear under the topic heading "Relationship to Other Institutions of Higher Education"? In other places in the bulletins, the authors seem to equate the community college with higher education. Or they seem to be concerned with the relationship of the community college to other institutions of higher education and to overlook the importance of its articulation with the secondary school. This happens frequently enough to suggest the feeling of a small minority of administrators and faculty members that the community college should eschew any identification with "secondary education" and should seek to identify itself with "higher education"--with all of its debilitating incrustations. The role of the community college in Pennsylvania is much too important to be entrusted to educators who may have this philosophy. The community college is a unique philosophy and its operating principles must be worked out in terms of its allegiance to its unique educational objectives rather than to any principles of alignment with previously existing levels of education.

> "C. The trend nationally is toward larger districts with a broader type tax base and a separate Board of Trustees--toward the community college district as a political entity in its own right, with taxing power and control of its own."

This is certainly a sound trend and it points the way out of one of the major difficulties of the financing and administration of public education in Pennsylvania--an escape from the minuscule tax base provided by the small school district. The bulletins do not do much to encourage a movement in this direction.

> "D. There is greater emphasis on statewide planning with the ultimate goal in mind that a community college opportunity will be available within reasonable commuting distance for all the youth of the state."

This too is certainly a sound trend and it is to be hoped that it will be included in the planning in Pennsylvania. Its acceptance in Pennsylvania will necessitate legislation which makes it possible for any student anywhere in the State to enroll in any community college of his choice without payment of excessive tuition. Either his local district or the State must provide the financial contribution which is necessary to enable him to enter his chosen community college on the same basis as a resident of the district in which the community college is located.

"Guidelines for Preparing Applications for the Establishment of Community Colleges"

This title is quoted from the bulletin and whatever the implications may be this is not a "how-to" bulletin. It does not tell how to prepare an application nor does it tell how to secure the necessary data to be included on some of the topics in the application. To cite only one example, the statement on adequacy of facilities seems inadequate. Obviously a school building could meet "all public safety and related codes" and could "be comfortable, well lighted, clean and attractive" and still be utterly useless as housing for an educational program. It repeats or restates from a slightly different point of view much of the information included in the other two bulletins, "Standards"and "Criteria." It does, however, contain some good statements. Like the bulletin on "Criteria," when it addresses itself consciously to matters of technical education, it is usually sound. For example, it considers the danger of overlapping inherent in the provisions of Act 463 and Act 484.

> "The amount of duplication of educational effort which could result from the overlapping of these two pieces of legislation could be considerable and untenable. It is hoped that subsequent legislation will clarify the roles to be played by community colleges and by the vocational-technical schools. In the meantime the State Board for Vocational Education (responsible for vocational-technical school development), and the Council for Higher Education of the State Board of Education (responsible for community college development), will have to resolve such difficulties as may arise. Local sponsors of proposed community colleges should be aware of the problems posed by overlapping legislation and community college plans presented to the State Board should present clear evidence that there will be no "conflict of interest" between the proposed community college and any area-technical institute which exists in, or is proposed for the same general locality."

In spite of this excellent statement, the Bureau of Higher Education in the Department of Public Instruction is exhibiting little inclination to cooperate with the Bureau of Technical and Continuing Education in the resolving of new problems of overlapping and duplication.

Under the topic "Necessity for a well qualified faculty," the bulletin enunciates a sound principle of accepting experience as a way of acquiring subject matter competence in the technical fields. It also recognizes the necessity for paying intructors of technical subjects salaries comparable to what they would earn in industry and business.

In discussing "effective administrative organization" the bulletin points out some significant facts which were overlooked in the other two bulletins. It recognizes the fact that "almost all college administrators graduated from colleges where academic singleness of purpose prevailed--where diversity was not only absent, but where it was perhaps even deplored." Naturally such an administrator is not going to be comfortable or competent in the administration of vocational programs. The bulletin pursues the subject with this statement:

> "As a consequence, even when the philosophy and purposes of the community college have been clearly thought out and established by the local citizens and their representatives, the Board of Trustees, there remains the (sometimes) very real difficulty of moving from words to action, from lip service to a living philosophy. Since the inherent tendency of a college faculty is to be conservative in academic matters--to stay with the traditional 'college level' courses and curricula--it is therefore a matter of necessity that the chief administrator (Director, Dean or President) exercise a high order of leadership with respect to the occupational education program."

The statement goes on to point out that since the chief administrator will need certain deans, department heads, and coordinators as assistants, "much thought should be given to the pattern of administrative organization in order to assure that the college parallel program and the occupational education program will both have high quality leadership." This is a good statement, but it seems to avoid a key question: The selection of people to fill in the administrative organization. A good pattern of organization will not do the job unless able people are found to fill the key spots in the organization. The finding of qualified people may be one of the most serious problems in the development of technical education in the community colleges--as well as in the technical institutes and the area vocational-technical schools, for that matter. There is no surplus of able vocational leadership in Pennsylvania at the present time; and the securing of administrators and supervisors in the numbers which seem to be indicated is going to be extremely difficult.

"Standards, Rules and Regulations for Public Community Colleges in Pennsylvania"

The bulletin is written in rather broad and permissive language. The standards make it possible for the community colleges to provide adequate programs of technical education; but they do not go as far as they might in insuring that the colleges will provide such education. In some cases specific provision is made only for the "technical" curricula. Does this mean that the colleges will not train craftsmen in the non-technical trades? Such a restriction will make necessary some other post-high school institution because eventually students destined for the non-technical trades will be seeking education at the post-high school level.

Under "Administrative Organization," the bulletin provides that "the administrative organization shall be so structured that the recognized purposes and philosophy of the college, as delineated in Section 2 (4) of Act 484, and as further amplified in the following section of this document, may be effectively carried out." But the statement on "qualifications of administrative officers" provides only that these officers shall hold a minimum of a master's degree and "shall have had training and/or experience in college or school administration commensurate with the administrative responsibilities assigned." This statement is general enough to permit the employment of such administrators for the direction of the technical programs.

In listing the tenets of the educational philosophy required of a community college in Pennsylvania, the bulletin includes technical education only as it is implied in a comprehensive educational program offering courses for non-transfer students and for occupationally oriented students. This bulletin, as well as the other two, seems to assume that technical courses will nearly always be non-transfer courses. This need not and should not be true. If the state colleges in Pennsylvania provide the kind of practical education which is indicated, then they will be able to accept many of the technical courses offered in the community colleges.

The bulletin also assumes that all occupational preparation courses will be two years in length. This is not necessarily true. The college attuned to community educational needs will be prepared to offer vocational-technical courses of any length required to bring students to employability. Some courses may require more than two years and others may require one year or even less.

Under graduation requirements, the bulletin states that some employment-bound students may graduate with no "transfer" credits. This may be possible; but the occasions on which it happens should be very rare. In fact, many administrators feel that courses in the community college should not be labeled transfer or non-transfer. They should be designed to prepare students for employment; but they should be of sufficient quality that many four-year colleges offering a degree in a similar technology or field of engineering would be willing to accept the courses in partial fulfillment of the requirements for the bachelor's degree.

The standards covering physical facilities should be strengthened and tightened to encourage the community colleges to design and build facilities that afford educational motivation as well as housing.

The standards covering library and other instructional materials should be extended to cover provisions for audio-visual materials, for self-instruction devices, and for other educational aids developed through new advances in instruction technology.

In general, the "Standards," "Criteria," and "Guidelines" outline a good community college program. However, before they can become really effective the State Board must determine the complete continuum of vocational-technical education and decide on policies which will establish complete coordination between all programs in all levels of schools.

DEVELOPMENTS UNDER ACT 299

As indicated earlier, Act 299 may prove to be one of the most important factors in the development of a vocational-technical program in the Commonwealth. The size of the school district and its resulting tax base will no doubt be one of the deciding factors in the development of any educational program. If further studies in Pennsylvania should support a rather widely accepted concept that any high school large enough to provide a really adequate program of high school education is large enough to provide a rather adequate program of vocational education, then the redistricting of schools in Pennsylvania under Act 299 will assume increased importance. In order to illustrate this, let us assume that further research establishes the premise that an adequate educational program cannot be provided economically in a high school of much less than a thousand students. Now, if further research also indicates that a school of a thousand students can provide a rather adequate program for training for those occupations which may be entered by high school graduates, then greater emphasis will have to be placed under Act 299 on reducing the number of school districts which enroll less than a thousand students in high school.

The possibility here can be illustrated by data from one of the counties in Pennsylvania. It is proposed that two area technical schools should be established in the county. Under Act 299, six school districts would be established in this county. The six districts would have a total ADM of slightly more than 8,000 high school students. When the provisions of 299 are effectuated, more than 80 percent of these students will be attending high schools large enough to provide a reasonably adequate program of vocational-technical education. Under Act 463, roughly one-half of these students will have to obtain much of their vocational education in an area technical school in which the administrative philosophy is that these students do not need English, social science, language, and literature in order to make a living. Considerable policy determination and educational research is indicated before a final decision is made on the structure and pattern of public education in this county.

In another county, it is proposed that there will be three area schools for some 12,000 high school students, grades 10 through 12. Unless the area technical schools in this county greatly exceed the drawing power of those now in operation in the Commonwealth, the three schools will enroll some 600 or fewer students, whereas 9,000 students will be attending high schools large enough to provide reasonably adequate occupational-vocational-technical preparation, leaving to the area technical centers the provision of highly specialized educational experiences.

Any long-term planning for the providing of a complete continuum of vocational-technical education in Pennsylvania must consider the relationships of these three acts along with other legislation providing for the establishing, the administration, and the financing of public education.

OTHER VOCATIONAL-TECHNICAL EDUCATION

It is not the specific purpose of this survey to consider the over-all vocational-technical educational programs available in the Commonwealth.

Section IV
Present Programs and Planning

Much of this information will be provided the State Board in two other surveys which are currently being conducted, i.e. of Community Colleges and of A Master Education Plan for the Commonwealth. It, however, is not possible to discuss post-high school education only in terms of area vocational-technical schools, technical institutes, and community colleges. The programs operated by the Pennsylvania State University in its two-year (Commonwealth) campuses and many technical private post-high school institutions materially influence the number and type of vocational-technical offerings which should be planned under Act 463 and 484.

Pennsylvania State University

Several of the two-year campuses are offering a few technical curricula. These are two years in length and are not related directly to pre-engineering programs. They are designed to be terminal programs in technical education. These are one of the types of technical curricula which should be offered by the community colleges and/or the technical institutes.

The State Board cannot allow competition to develop between the State University and Community colleges or technical institutes. The programs offered by the State University are good and have been well administered. They have served a need in the Commonwealth up to the present time. However, this type and level of education should not be in the province of a state university when other educational facilities can offer such programs easier and perhaps more efficiently and can cover a larger segment of the State population.

It is hoped that the recommendations in the other two surveys will point toward the continued development of the State University as a prestige institution, offering bachelor's degrees, master's degrees, and doctor's to an upper percentile of high school graduates and community college graduates as determined by the State Board and the Master Plan.

It is also hoped that the State University will expand as a four-year and a graduate level university to other campuses in the Commonwealth. The two-year campuses, which currently exist, should either be closed when a community college in that area can take over the responsibility or should be converted into a four-year branch university.

Private Schools

In a like manner any two-year campuses of a private university should be modified or discontinued with the development of community colleges.

Non-degree granting post-high school private technical or vocational institutions should continue; and it is hoped they will be able to expand. Perhaps some of these which offer quality post-high school technical education could serve as skill centers on a contractual basis with the State and/or with area vocational-technical districts. This would be practical in instances where it is not financially feasible to establish a limited-purpose public facility to handle a specialized technical curriculum.

Section IV
Present Programs and Planning

SUMMARY

Specific recommendations relating to this section are contained in Section V and VI. In this section we have outlined many of the questions which are prevalent throughout the State in connection with the interrelationships between the area vocational-technical schools, comprehensive high schools, technical institutes, and community colleges. These questions should not be considered as objections to any of these types of schools. They, however, are questions which must be resolved by the State Board in order to allow all of these educational units to function practically and to serve best the needs of the students of the Commonwealth. Some of the answers are suggested in the following sections.

SECTION V

PROPOSED EDUCATIONAL ORGANIZATION

This section supplements Section IV and suggests some of the institutions and the parameters within which Pennsylvania should provide a complete and statewide program of vocational-technical education that will meet the demands of its economy and will satisfy the desires of its students as they seek their places in the economy. The institutions which are available or which can be made available under recent legislative enactment are the high schools, area vocational-technical schools or area technical centers, technical institutes, and technical divisions of community colleges. We have eliminated from this discussion the two-year technical programs in four-year universities since these should not be continued after the above programs become operative.

It is important that the educational system be organized in a way which will allow every student who has the ability and the desire to do so either to obtain a college education or to receive sufficient skill-centered education and training which will enable him to offer a saleable skill to potential employers. The limitations in numbers and in percentages of students who are currently in such programs requires that the reasons for such limitations be modified and/or removed.

VOCATIONAL-TECHNICAL EDUCATION IN THE HIGH SCHOOL

The traditional vocational programs in the high school need to be evaluated objectively. Sufficient and adequate staff must be provided the Bureau of Technical and Continuing Education to allow the continuing evaluation of all Trade and Industrial, Agricultural, Business, Distributive Education, and Homemaking programs. Many of these are in need of revision and updating but they should not be overlooked as a potentially important part in the total program of vocational-technical education. They need to be revised in content, emphasis, and method; and they need to be revised in methods of reimbursemant from State and Federal vocational education funds. At the present time, each of the programs has its own unique and peculiar methods of reimbursement and supervision, which make it difficult for the local administrator to incorporate them into his total education program and to budget for their operation.

Certification requirements for teachers and for supervisors and administrators should be restudied and brought into some agreement. A crash program for the training of local supervisors and directors of vocational education should be instituted.

At the present time, all supervisors and administrators come up through one of the services and, therefore, are usually experienced and versed in only one of the vocational areas.

When these changes are made, the traditional vocational subjects in the high school can become a functioning part of the total program of vocational-technical education.

Occupational Preparation Courses

National interest in the possibility of providing practical occupational training in the comprehensive high school started with the Great Cities study of vocational education made several years ago. It gathered added impetus from the spreading realization that technology requires not only the engineer and technician but also the craftsman and semi-skilled worker. Some of them go to work upon high school graduation and some others might even be high school drop-outs. Analysis of the low educational achievements of the unemployed and of the high incidents of unemployment among high school drop-outs underlined the social and economic necessity for providing occupational training in high schools. In states which have developed a strong system of junior or community colleges, it also became apparent that some of the technical training employers ask of these colleges is not possible in two years unless the entering high school graduates have some pretechnical training.

As a result of these pressures, school administrators and directors of vocational education activated studies and experimental programs aimed at meeting the needs of two types of high school students; those who will seek employment before or immediately after high school graduation and those who hope to continue their vocational or technical education through a 13th or 14th year. The two groups are not mutually exclusive, and the courses designed for their education are flexible enough to serve either of the basic purposes--job preparation or college preparation. This is particularly true if there is close articulation between the high schools and the community colleges.

It, therefore, becomes necessary to design occupational preparation programs which can be offered in only slightly augmented industrial arts shops and will prepare students for going to work upon graduation, or will qualify them for continuing their education in a technical institute, skill center, or a community college.

There was a time when most vocational educators would have said this was impossible. Maybe they were right--at that time. But things have changed. Instruction technology has advanced; teaching methods have improved; and educators have discovered, or rediscovered, that students will learn an amazing number of things on their own when motivated and guided through educational experiences.

There are now in operation a number of experimental programs which are accumulating strong evidence that, based on one year of industrial arts exploratory experience, a one-year program can be designed which will contribute to a liberal education, prepare for entrance into an occupation, and qualify for entrance into a community college or a four-year college. Pilot experiences with such experimental programs in occupational preparation in the high school indicate that the cost of such programs is not excessive in dollars; they do not require excessive outlay for equipment and facilities. They do, however, require major effort in the development of instructional materials and in the re-orientation of instructors and long-termwise they will require some basic changes in the education of teachers and of supervisors and coordinators of vocational-technical education.

VOCATIONAL-TECHNICAL EDUCATION
IN THE AREA TECHNICAL SCHOOL

Unless the area technical school can quadruple its present apparent drawing power, it is not going to provide the vocational-technical education that is needed at the high school level. It is a significant experiment and should be pursued during a period long enough to permit a thorough and objective evaluation of its possibilities. These possibilities would seem to lie in three directions.

1. The area technical school should continue as blueprinted by Act 463 and by the regulations laid down by the Department of Public Instruction. Nationally, the evidence for success in this direction is not encouraging. The basic difficulty lies in persuading high school students to attend two different schools simultaneously in the pursuit of their education. However, the confidence and the support which seems to be given to this experiment in Pennsylvania warrant its continuation and the exploitation of every possible factor which might contribute to its success.

2. By expanding its offerings in the related subjects in general education, and in the academic or college preparatory subjects, the area technical school can become a self-sufficient full-time school providing a complete education program with strong emphasis on the technical subjects. This would attract highly motivated students who have more than average ability in the technical subjects but probably would not attract a majority of all those students who will seek employment upon or before high school graduation. Such a school could also serve as a training and retraining center for adults. Here again, nationally, the evidence is not encouraging. Rarely has such a school attracted as many high school age students as need this kind of education; and, as for the adult program, it is difficult to attract adults to a "high school" training center if there is available a similar training center conducted by a community college. The "college" has status and superior drawing power for adults.

3. The area technical school might become a highly specialized technical center where students from the feeder high schools could go periodically for educational experiences which cannot economically be provided in the individual high schools. Such experiences might include special laboratory experiments and lecture-demonstrations involving specialized and expensive equipment and made available to large groups. Such lecture-demonstrations would then be followed up by a small-group discussion in the individual high schools where the instructors would lead the students in using the newly acquired information to think about the problems under discussion.

Another function which might be served by such a specialized area technical center is the provision of what is coming to be called "learning laboratories." These take several forms, one of which is an individual carrel that provides an insulated environment designed for programmed instruction, thinking, evaluation, and the other individual activities necessary in the acquiring of a real education. The carrel calls upon all of the latest developments in instruction technology for bringing to the student those materials which he needs in his problem solving and learning.

The area technical center could also serve as an audio-visual depository from which materials could be distributed by closed circuit television to selected classrooms in the member high schools. The technical center might also serve as an extension campus for one or more community colleges, thereby bringing the college programs closer to the people.

If it were organized and equipped to do all or many of these things, the area technical center would be a key unit in an educational complex capable of providing a superior program of vocational-technical education in the Commonwealth. Of course, the success of such multiple usage would depend to a great degree on the articulation with the efforts of the comprehensive high school, the technical institutes, and the technical divisions of the community colleges.

THE TECHNICAL INSTITUTE

The place of the technical institute in the vocational-technical education complex of the Commonwealth depends on several factors outside of the institute itself. Some of these are:

1. Legislation permitting technical institutes in districts other than the two counties now authorized with adequate financing.

2. The clarification of the respective objectives of the technical institute and the community college.

3. The growth and directions of the other institutions involved in vocational-technical education.

The place of the technical institute also depends on its own development. If successful technical institutes are developed in some localities, they would probably expand into other areas. An able administrative staff with an able faculty and ample financing could make such programs successful.

In general, however, the technical institute faces a dilemma. If it remains aggressively "technical institute" (rather than "comprehensive"), it will attract a select but limited student body and turn out successful graduates who will justify its existence. But it will not attract all of the students who need post-high school vocational education. If it broadens its curricula to the point of becoming "comprehensive," then it does not differ much from a community college.

The manner in which it could differ from a community college may be significant. It could, and probably would, differ in the educational philosophy of its administrators and faculty. The general administrator, and those who imitate "higher education" draw their axioms and prejudices from the traditional academic philosophy; the vocational-technical administrator draws his from the factory and the market place--where his graduates will find employment.

It may be necessary to operate a number of technical institutes in order to keep the community colleges "practical." This dual system has worked well in other parts of the nation during developmental stages. Then, as each becomes successful and exercises its influence on the other, they tend to merge and become a better institution than either would have been had it developed separately.

Section V
Proposed Educational Organization

THE COMMUNITY COLLEGE

The development of a statewide system of community colleges in Pennsylvania is inevitable. As the State shifts from its old-time basic industries to pursuits of newer technologies, it will have to recognize that industry goes where trained workers are to be found. The community college trained technician is now a recognized member of the engineer-technician team and must be supplied in quantity and quality.

Of course, some of these technicians can be trained in technical institutes; but the trend in post-high school education, apart from the traditional four-year colleges and universities, is to the comprehensive community college.

This study is concerned only with the technical divisions of the community college--its facilities, its administration and supervision, and its instruction.

Facilities

The planning of educational facilities is treated in another section of this report. At this point it need only be emphasized that technical education at the community college level is a rather specialized function which must use its facilities to do a large part of its teaching. A well-planned and well-constructed building, when amortized over its lifetime, adds very little to the per-student cost of the educational program. And, unless the equipment relates to that found in industry and business, the teacher is working against a serious handicap and the student is being shortchanged.

Administration and Supervision

As indicated in Section IV of this report, this could be the weakest link in community college development. The direction of a vocational-technical education program requires some skills which the general administrator does not have. People who do have these skills, along with sound administrative or supervisory ability, are in short supply. The current increase in interest in vocational education nationally has resulted in a demand which cannot be supplied by existing training agencies.

A rapid, intensive developmental program is needed. Pennsylvania must solve this problem by proper utilization of present and new training facilities and methods. We cannot ask whether it is possible; it must be done, and soon. Some suggestions are offered under Recommendations at the end of this section.

Instruction

Apparently qualified teachers can be recruited. What is lacking in instruction is really adequate instructional materials. Yesterday's "course outlines" will no longer suffice. If today's teacher is going to do today's job, he must be supported by all of the tools with which a new instruction technology can provide him. This too requires developmental work and planning by a strengthened Bureau of Vocational-Technical Education.

VOCATIONAL-TECHNICAL EDUCATION IN THE COMMONWEALTH

Broad levels and types of vocational-technical education are required to meet the needs of the Commonwealth and of the students who must be adequately educated and trained here. We need vocational-technical programs in comprehensive high schools, area vocational-technical schools, technical institutes, and community colleges. But which programs should be conducted in each type of school? Educators do not agree. The administrators of each level and type of school tend to broaden their program as much as possible and seem to believe their school can cover most of the needed training. To some extent this is true with limited student populations which are carefully selected. It is not true for the large percentage of students who must be taught a saleable skill. All types and levels of education are needed to cover the student population. Therefore, we must turn to industry--to the employers--to determine what kinds and levels of training they require.

Industrial Needs for Trained Personnel

In order to determine the types and levels of training in vocational-technical areas which are required by individual students in order to obtain entry-level employment in their field of training, a large number of industrial contacts were made. Industries of various sizes in each of the statistical areas outlined in Section II of this report were contacted in order to validate similar and more complete studies concerned with specific statistical areas within the Commonwealth. The following statements of need were determined.

When adequately trained employees are made available through educational institutions in the Commonwealth, the average employer will hire less than 10 percent of his total work force of the future from among students who have completed less than a high school education.

From 11 to 15 percent (depending on the statistical area) of the employees of the future would be hired by industry with only a high school education, unless certificates of competency were issued in some specific field in which there were job vacancies.

An average of 22 percent of the work force would be hired following high school graduation if the individual student had completed specialized training in a comprehensive or vocational school and had been given a rating of competency in such specialized field. This percentage and the two preceding ones would decline if larger numbers of post-high school students with similar skills were available.

Even under current levels and standards of education, approximately 30 percent of the work force would be hired from among those students who had completed at least one and up to three years of post-high school specialized training and education in some occupational, vocational, or technical field. (This percentage would increase to an average of 42 percent after more post-high school students become available in the employment market.)

From 23 to 31 percent of the work force, depending on the statistical area, would be hired in the future only following a minimum of four years of college work. Approximately 60 percent of this college group would be expected to have completed some specialized training in college or at the graduate level.

These general statistics from the industrial contacts indicate that as the level of education and training in the State increases industry will be establishing higher and higher employment standards. Currently, however, the general employment requirements are as follows, by the various types of vocational training.

Technical Training: Approximately 15 percent of the total work population within the next two years will be employed from among individuals with some technical training. Nearly one-half of these will be recruited from among college graduates. Therefore, approximately eight percent of the total high school population should be enrolled in some technical training program. Approximately one-third of the 34 major technical areas of employment could be trained for at the high school level. The remainder would require from one to several years of post-high school training. Entry-level employment could be obtained in 18 of the technical fields without post-high school work. However, 11 of these would require on-the-job training or additional education while working.

Eight percent of the high school population should be involved in some form of technical training. Approximately 3 percent should receive all of the technical training they need at the high school level. Three percent would need post-high school supplementation of from one to three years. Two percent would transfer into technical programs at either the senior high school year or the first post-high school year. Seven percent of the high school graduates will complete college and later go into technical fields. This totals the 15 percent of the labor force which industry approximates will be required from this grouping.

Vocational Training: Including indentured apprenticeship training, approximately 17 percent of the total work force will be in skilled occupations. Of this total, 4 percent will be employed from college graduate groups and 13 percent from those with high school graduation and/or some post-high school work. Therefore, at least 13 percent of the high school population should be enrolled in skilled level vocational programs. Approximately three-fourths of the 26 major skilled areas of employment can be trained for at the high school level. In some added post-high school work would be necessary. The apprentice groups would continue to be in post-high or extended day programs for the period of the apprenticeships.

Seven percent of the high school population should be enrolled in vocational programs which would lead to skilled job competencies at the completion of high school. Four percent should be enrolled in high school programs which would require some post-high school supplementation. Two percent will transfer into skilled level training at the post-high school level. Four percent of the high school population will complete college and later go into skilled levels of employment. This totals the 17 percent of the work force which industry approximates will be required from this grouping.

Occupational Training: The occupational group includes both semi-skilled jobs and service types of employment. Twenty-six percent of the total work force will be in semi-skilled or service occupations. Nineteen percent of the high school students should be in occupational programs which can be completed during the high school years. Two percent should be in occupational programs which would require some post-high school supplementation. Three percent will transfer into occupational programs during the last year of high school or at the post-high school level. Two percent of the high school graduates will complete college and later go into service or semi-skilled occupations. This totals the 26 percent of the labor force which industry approximates will be required from this grouping.

Business, Clerical, and Distributive Occupations: A total of 30 percent of the labor force will be employed in these employment groupings. Ten percent of the high school students should be in such programs which can be completed within the high school years. Eight percent of the students should be in programs which would require some post-high school supplementation. Four percent of the students will transfer into these groupings at the 12th grade or at the post-high school level. Eight percent of the high school graduates will complete college and later go into business or distributive fields. This totals the 30 percent of the labor force which industry approximates will be required from this grouping.

Professional, Administrative, Etc.: Twelve percent of the labor force will be in professional, managerial, and administrative types of employment which will require a minimum of a college degree. Nine percent of the high school graduates will complete four years or more of college and go directly into these occupations. Three percent of the high school population will transfer into such programs and into academic, scientific, or professional curricula at the 12th grade or during the first post-high school years of education.

Levels of Education

Totaling the above requirements as indicated by a sampling of industries in each of the statistical areas of the State, the following approximations can be used on a statewide basis.

Thirty percent of the total high school population should be in a regular academic, college preparatory program and will continue in this program through their college years. An additional 14 percent will have been in academic curricula until they transfer into other curricula to prepare for specific job opportunities during the last years of high school or during the first two years of post-high school work. Therefore, college preparatory (academic) facilities should be able to accommodate 44 percent of the high school population.

Seventeen percent of the high school population should be enrolled in vocational-technical preparatory areas which will require high school work and post-high school supplementation. Thirty-nine percent should be enrolled in such vocational-technical programs which can be completed in high school. In addition, 11 of the 14 percent of the students originally enrolled in academic work will transfer into vocational-technical levels at the high school or post-high school levels. Therefore, 67 percent of the high school population should be in vocational-technical training programs at some time during their high school or post-high school educational careers.

Vocational-Technical Education by Type of School

In reviewing the above percentages of placement needs and the types of education such needs would dictate, it would appear that by 1970 the enrollment of students in the high school and post-high school programs in the Commonwealth should follow approximately the pattern listed below.

Comprehensive High Schools: A total of 93 percent of the high school students in the Commonwealth should be enrolled in comprehensive institutions. This includes the 30 percent who will go directly into colleges from academic curricula; 13 percent who will transfer into other programs from academic curricula at the post-high school levels; 15 percent who should be taking vocational-technical programs requiring post-high school supplementation; and 35 percent who should be taking vocational-technical programs which do not require post-high school supplementation. To accomplish this increased utilization of comprehensive high schools, it will be necessary for many of the small schools to either combine or develop new programs of their own which can give a really comprehensive educational experience.

Area Vocational-Technical Schools: Approximately 7 percent of the high school population should be expected to attend an area vocational-technical school or some similar type of skill center which provides facilities and/or curricula not available in the feeder comprehensive schools. This includes 1 percent of the high school students who will transfer into vocational-technical programs at the 12th grade; 2 percent who will be enrolled in general vocational-technical programs in high school but which require post-high school supplementation; and 4 percent who should be enrolled in specialized vocational-technical programs which can be completed within the high school years. This percentage of total students enrolled runs approximately double the percentage from the feeder schools which currently operating area vocational-technical schools have been able to recruit. To accommodate this number of students there should be approximately 60 area vocational-technical schools and/or technical centers located throughout the State by 1970. Many of these should be small, limited purpose facilities where high-level skills can be presented.

Technical Institutes

Approximately 9 percent of the total high school population should, following completion and/or drop out from high school, be enrolled in technical institutes. This would include 4 percent who would transfer into a vocational-technical program at the 12th grade or following high school graduation and 5 percent who should be enrolled in high school vocational programs requiring post-high school supplementation. There will be need by 1970 for 10 technical institutes throughout the State. Most of these institutes should be located in large urban centers and/or in portions of the State which are adequately covered by two-year branches of universities which offer general academic lower division work.

Community Colleges

Approximately 36 percent of current high school students should enroll in community colleges. This would include 15 percent who plan to complete four years of college and will later transfer to a four-year institution; 9 percent who will transfer into a vocational-technical program at the post-high school level; and 12 percent who will have taken vocational-technical work in high school which requires post-high school supplementation.

Four-Year Colleges

Approximately 37 percent of the high school graduates should be enrolled in four-year colleges by 1970. This will include the 30 percent who have continuously been in academic programs through high school. Approximately one-half of these will have continued their work through the community college and will enroll in four-year institutions at the upper division level. It also includes 1 percent of the high school population which will transfer into a specialized technical program which requires four years of college; and 6 percent who have taken vocational-technical subjects in high school but who have decided to continue on for a full degree in the subject or a related subject area. Eventually the ratio of students in the first two years of a four-year college program should be 60 percent in community colleges and 40 percent in four-year colleges. However, the percentages of completion of four years or more of college will increase to from 30 to 35 percent of the total high school graduating group. This is approximately double the current percentages of completion and will, through the development of an adequate educational continuum, assure that four-year colleges will prosper as much or more than do the community colleges and institutions authorized under recent legislation.

Transfer Between Types of Schools: As much as possible the type and level of work offered in the various institutions which have been discussed in this report should be transferable between institutions. This should be one of the prime recommendations of the Master Plan and should certainly be the goal used by the Department of Public Instruction in setting up evaluation criteria.

Under current legislation there are very few attendance restrictions for area vocational-technical schools, technical institutes, or community colleges. Area vocational-technical schools can conduct post-high school programs. Technical institutes and community colleges can conduct high school level programs. The deciding factor as to which institution offers which level of education may be dependent to a great extent on student charges and tuitions. Many educators in the State have indicated that they hope to develop post-high school programs in area vocational-technical schools since they are tuition-free. There has been some expression that technical institutes and community colleges in some parts of the State may not charge the full tuition authorized under the laws and, in some instances, may charge no tuition since this is not a mandatory provision of either Act 463 or Act 484. Surveys of students in some districts of the State have indicated that full training for full employment can be made available only at relatively little or no tuition cost to the student who now most needs it. All of these factors of cost must be considered by the State Board, the Department, and the legislature in finally deciding the types of institutions and the degrees of coverage they feel are necessary to provide a complete educational continuum in the Commonwealth.

Another possibility should be considered. In some areas of high population it may be that eventually only comprehensive high schools and community colleges will be operating. Community colleges and technical institutes in not being limited to post-high school programs could absorb much of the education being contemplated for area vocational-technical schools and could also absorb some of the comprehensive high school vocational and even specialized industrial arts laboratories. This tendency is developing in other parts of the nation and should certainly be considered as a possibility in some of the more populous regions of the State.

The over-all cost to districts and the cost to students will be very important considerations in considering the expansion of technical institutes or community college facilities to offer special services and training to certain groups of high school students.

SUMMARY OF RECOMMENDATIONS

1. The traditional programs in the high schools must be evaluated and revised to meet currently set objectives and must be related to skill-centered education.
2. The reimbursement patterns for all vocational services should be reconciled into one pattern for all services.
3. Sound vocational programs in the high school, whether traditional or of the newer occupational preparation type, should be reimbursed on the same basis as similar courses in area vocational-technical schools.
4. Steps should be taken immediately to activate some experimental programs in occupational preparation in high schools. There should be a careful selection of districts and instructors to plan and implement these experimental programs. Selected teachers should be involved in curriculum development workshops.
5. The minimum standards of enrollment in high schools constituting a district and the assumption that a relatively fixed percentage of students will attend area schools, which has not been related to either percentages of attendance in the past nor to the types of programs offered, must be modified to conform to different needs in different geographical and/or economic areas.
6. The "area" pattern of having students divide their day between "education" in their home school and "vocational training" in the area vocational-technical school tends to aggravate an erroneous concept that education and vocational education are two different things. All policy, regulations and training should be geared to changing this concept.
7. The State Board and the DPI must expand their areas of interest in skill-centered educational programs. A major portion of Federal funds for vocational education should be used to develop new and comprehensive skill-centered programs in most high schools. Only by such expansion of the scope of vocational education will the Commonwealth ever prepare the number of workers needed for the expanding economy which is bound to develop.

8. Area vocational-technical schools should be encouraged to develop in all areas where such skill-centers are needed and at least one should be encouraged to develop into a technical institute, at the high school level, offering complete education to selected technical students.

9. Several area vocational-technical schools should be encouraged to develop into technical "centers" where:

   a. Teachers from comprehensive schools could take classes for special experiments or work on special equipment.

   b. Large group lecture-demonstrations involving sophisticated equipment could be staged.

   c. Individual students could be referred for advanced study.

   d. Sophisticated audio-visual materials could originate and be distributed by closed circuit TV or otherwise.

   e. Self-instruction devices could be developed and tried in "learning laboratory" situations.

10. Several technical institutes should be established and encouraged to explore experimentally all of the educational advantages of such separate specialized institutions. They should not be located in areas in direct competition with a developing community college.

11. Community colleges should be developed throughout the Commonwealth as rapidly as possible. There should be no annual limitation on the number which can be approved by the State Board.

12. The tendency of some educators to follow a pattern of "copying" some other state's community college program rather than developing a completely different system to provide the continuum of education required in this Commonwealth should be studied by the State Board.

13. The problems of cost and tuition and a discussion of the conceivability that in the forseeable future the State might extend free education to include the technical institute and/or the community college should be studied by the State Board and all districts planning to implement any new vocational-technical programs.

14. A continuing study would be conducted in each county and/or each area vocational-technical district to determine the current needs and requirements of industry and their acceptance of various types of training at the several levels of education available under the three Acts. The present tendency in most AVTS units to offer relatively high level technical programs must be evaluated, both by the DPI and employer advisory committees. These programs have been successful to date. Placements have been good. However, such records will probably change if a much larger percentage of students is enrolled on a less selective basis and when technical institute and community college prepared students are available on the labor market.

15. The community college and/or the technical institute should provide the post-high school vocational-technical training of less than baccelaureate level required in the Commonwealth. Any state supported four-year colleges or universities offering such programs should discontinue them as soon as community colleges are able to take over in the area served.

16. Skill-centered curricula, whether offered in high schools, area schools, or at the post-high school level, must be broad in their coverage. Programs must be made available for students with all ability and interest levels. Limited purposes and limited levels of curricula will not materially aid the Commonwealth in establishing the complete educational continuum required to develop and maintain a stable society and economy.

SECTION VI

FISCAL POLICY AND LEGISLATION

This section is concerned with the analysis of the current financing of vocational-technical education; the allocation of State and Federal assistance to the districts; the salary inequities in the Department of Public Instruction; the organization of the Department of Public Instruction; the State Board as a policy-making and administrative unit of State government; the development of the Education Code; and legislation needed to correct some of the problems involved in connection with the items discussed in this report.

STATE AND FEDERAL FINANCING OF VOCATIONAL EDUCATION

The amount of State money appropriated for vocational education has been negligible compared to district and Federal expenditures. This has been a major cause of the sub-standard development of skill-centered education at both the high school and post-high school levels. Recent enabling legislation, which is discussed in this report, would have materially improved this situation if adequate appropriations had been made to finance the mandated Commonwealth's portion of the cost of programs made possible under these enabling acts.

The school districts in Pennsylvania have not materially benefited from the Federal funds which have been provided for general vocational education purposes in the past. With a few exceptions, such as under some titles of the National Defense Education Act, most of the Federal funds have been allocated by the State to meet responsibilities for ADM participation which the State law (School Code) mandated. Therefore, the majority of Federal Funds have been in lieu of State monies to the districts and have served primarily to reduce the State's fiscal responsibility for vocational programs. Any mandated assistance or participation in State law should be budgeted by the State and provided to the districts from State funds. Federal monies should be used for other purposes to assist both the State and local districts to establish more and better programs.

In general, except for the Basic Reimbursement Fractions and the Capital Reimbursement Fraction which have been provided for all elementary and high school programs in the Commonwealth, aid for vocational education has come from Federal funds. Actually, the obsolete way in which these Reimbursement Fractions are computed has resulted in a considerably higher percentage of State money being allotted to small districts which have not operated vocational programs. State monies have, therefore, never in the past motivated the offering of comprehensive educational programs.

The Commonwealth has provided assistance in vocational programs only to the extent it has provided assistance in general education programs by utilization of the Capital and Basic Reimbursement Fractions. This general assistance to education has been considerably less than that provided in most of the large industrial states and has actually been much less than the national average of state participation in the financing of education.

With the increased amount of monies available from the Federal Government under the Vocational Education Act of 1963 (P.L. 88-210) it appears to be expected by the State Board, by the Department of Public Instruction, and by other State departments, that sufficient Federal monies will be available to provide the mandated State assistance spelled out in Act 463. This could possibly be true for the next year or two, during which time there will be relatively few area vocational-technical schools in operation. However, with the establishing of adequate occupational-vocational business programs in the comprehensive schools, the amount of Federal money available could meet only a small percentage of the participation mandated in the Public School Code.

It is doubtful that any of the Federal funds should be used to reduce the participation the Commonwealth is mandated to provide local and area districts. We recommend that the State Board ask the Legislature to appropriate sufficient funds to cover the expected State portions of the costs of the provisions of Act 463 and 484 and of the other mandated provisions of the Public School Code.

Federal funds should be used only to supplement State and local funds, not to replace either. Wherever possible, Federal funds should be used to develop more adequate programs and more complete systems of evaluation. The basic responsibility for programs rests with the local districts and the State. Neither the State Staff nor the area vocational-technical schools should be financed primarily from Federal funds.

In states where relatively well developed programs currently exist, the amount of money available under P.L. 88-210 allows only for the expansion of programs and the development of better programs. This procedure should be followed in Pennsylvania.

We recommend that Federal funds be used primarily to expand, improve, evaluate, and supervise a comprehensive continuum of vocational-technical education in the Commonwealth. It should be made available to all levels of education from the comprehensive high school through the technical institutes and community colleges. In general, Federal funds should serve the following purposes:

1. Aid districts in financing capital and equipment costs over and above the mandated State participation.

2. Establish research, curriculum development, evaluation, and training services as discussed in Section VII.

3. Assist in providing adequate supervision in local districts by training such personnel and paying a substantial percentage of their salaries. Currently districts must employ supervisors; but there is no State or Federal aid provided for expenses, training, or salaries.

4. Assist the districts by providing adequate vocational counseling personnel to be jointly financed by the district and out of Federal funds. Federal funds should be available for the training of such personnel.

5. Establish a system of objective program evaluation and provide more Federal funds to those districts which operate superior programs; which conduct program research and development; and which most adequately meet both the training and retraining needs of the areas served.

State Participation in Vocational Education

As indicated above, most of the financial participation by the State has been in connection with Basic and Capital Reimbursement Fraction. These reimbursement fractions have provided rather adequate State assistance to some of the smaller school districts which have not operated vocational-technical programs. The average to most districts, however, has been too low, and, particularly in the large districts, the amount of State participation has been so small that it has been extremely difficult for adequate programs to be developed or maintained. The variance in the amount of State assistance to districts is extreme and cannot be accounted for by any logical "equalization" factor. For example, the following differences should be considered by the State Board, survey groups, and the Legislature in reevaluating reimbursement fractions:

1. The percent of State subsidies to total revenues for school purposes currently averages 38.1 percent for suburban boroughs; 54.4 percent for rural boroughs; and a high of 61.1 percent average in rural 2nd class townships. The two largest urban centers receive considerably less than any of these averages: Philadelphia receives 31.2 percent and Pittsburgh 20.8 percent.

2. The median State subsidy per pupil ranges from a low of $90 in Pittsburgh to a high of $200 for rural boroughs.

3. Combined school, municipal, and county taxes for urban districts and class 2 cities ranges from 16 to 43 percent higher than the average total taxes of suburban and rural districts.

4. The percentage of taxes available for school purposes ranges from approximately 30 percent in Philadelphia and Pittsburgh to a high of from 65 to 75 percent in rural 1st class townships.

These are only a few of the many factors which should be considered in the readjustment of Basic and Capital Reimbursement Fractions. There is no question that some form of equalization is necessary throughout the State. Most states, however, and particularly those which have made the greatest strides in education, have rejected the pure equalization plan of subsidizing the education of children and are using a foundation-equalization program. This means that such states make a substantial ADA or ADM grant per child and supplement this amount on an equalization basis which considers both the local district's wealth and need. We suggest that such a modified system be established in Pennsylvania and recommend for consideration the following three-part formula:

1. Fifty percent of the total amount of money available for distribution by the State should be allocated to the districts on an ADA or ADM basis.

2. Twenty-five percent of the total money available should be distributed to the districts in accordance with an up-dated formula based on the ad valorem ratio per student.

3. Twenty-five percent of the total money available should be distributed to the districts on the basis of average per capita income of the district as related to student enrollment.

This combination of factors should constitute the Basis Reimbursement Fraction. There should be little or no difference between this fraction and the Capital Fraction.

We suggest that the State Board work closely with other groups interested in the study of Basic and Capital Reimbursement Fractions and join these groups in making recommendations for the legislative establishment of more realistic reimbursement ratios.

Equalization to All Types of Vocational Programs

With the adding of "vocational, business, and office education" as a participatable program under Act 463 and with the enabling provisions in P.L. 88-210, which allow the comingling of Smith-Hughes, George-Barden, and other Federal funds with the monies provided under P.L. 88-210, it would appear logical for the State law to be revised to eliminate the differences in participation which have previously been allowed the districts for vocational programs on an ADM basis. The $35 allowed for Trade and Industrial, $50 for Distributive Education, and the $20 for Homemaking and Agriculture should be changed and the same amount be allotted for each of these programs and for Business Education on an ADM basis as has been recommended previously in the report. The $75 ADM allowed under Act 463, in addition to the above amounts, should be added to the basic figure established for all skill-centered programs and should be made available both for such programs operated in an area vocational-technical school and comprehensive high schools within an area vocational-technical school attendance area.

SALARY REQUIREMENTS AND DEPARTMENT ORGANIZATION

It is becoming increasingly difficult for the Department of Public Instruction, and especially the Bureau of Technical and Continuing Education, to maintain an adequate staff, whether in terms of number of employees or qualifications. This is due primarily to the inadequate salary structure under which the Department is operating.

With the establishing of hundreds of vocational-technical units in Pennsylvania and in adjacent states, many of the more competent Bureau staff members have been leaving for employment at considerably higher salaries in area, district, or State vocational-technical programs. It is not practical to attempt to match the highest of the salaries which these individuals have received. It, however, is essential that the salary base be materially increased in order to approximate more nearly the average paid for similar positions in districts throughout the northeastern part of the nation.

The State Board of Education is recommending, and legislation will undoubtedly be introduced, to increase the salary of the Superintendent of Public Instruction by some ten to fifteen thousand dollars a year. We believe this to be a realistic figure within which competent personnel can be recruited, and are also recommending the following salary schedules for subordinate personnel within the Department.

1. The Director of Vocational-Technical Education should be paid a minimum of $20,000 annually. The salary should be the same for the Director of Higher Education and for the Assistant Superintendent for Basic Education. It would also be sound organizational policy for these three positions to carry the title and authority of Assistant Superintendents.

2. The Director of Instruction Services, the Director of Program Operation, the Director of Inter-Agency Relations, and the Director of Fiscal Operations, which have been recommended in the proposed organization of the Department, should be paid a minimum of $17,500 annually each.

3. The four Area Directors of Vocational-Technical Education should be paid a minimum of $15,000 annually.

4. The four major Assistants to each Area Director should receive a minimum of $13,500.

5. The Area Coordinators in all fields should be raised to a minimum of $11,000 with the range increasing, depending on experience and background, to $12,500.

It is nearly impossible to establish or maintain a practical continuum of skill-centered education under the present Department of Public Instruction organization. The organization of the State Board is geared to such a continuum through the establishing of a State Board for Vocational Education. The Department should be similarly organized.

Currently the Bureau of Technical and Continuing Education falls organizationally under the Assistant Superintendent for Basic Education and the community colleges fall under the Assistant Superintendent for Higher Education. Therefore, both "basic" and "higher" education are involved in the 13th and 14th year vocational and/or technical programs.

All vocational-technical programs should be subject to the standards established by the State Board for Vocational Education and should be under the direction of a Director of a Division of Vocational-Technical Education. Vocational-technical education is neither "basic education" nor "higher education" nor both. It is a continuum of training reaching through the entire educational structure and, as such, must be administered as a unit regardless of whether programs appear in comprehensive high schools, in area vocational-technical schools, in technical institutes, or in community colleges.

There then should be three major divisions exercising line responsibility within the Department of Public Instruction. They would be the Division of Basic Education, the Division of Higher Education, and the Division of Vocational-Technical Education. All other units, divisions, bureaus, and/or services in the Department should serve in a Staff capacity to the Superintendent and to the three "line" divisions, each of which has a unit of the State Board to which it reports through the Superintendent, i.e. the Council for Basic Education, the Council for Higher Education, and the State Board for Vocational Education. Line supervision within the Department does not infer line supervision of local districts.

We recommend that the State Board prepare and submit a revised organizational pattern of the Department with a suggested salary structure to the Legislature. These changes would enable the Department to function more efficiently and maintain an adequate staff which could plan, supervise, and evaluate the vocational-technical programs needed in Pennsylvania.

THE RESPONSIBILITY AND AUTHORITY OF THE STATE BOARD

The Public School Code and the several Acts which are discussed in this report all grant definite responsibilities and authorities to the State Board of Education, the State Board for Vocational Education, and the Councils for Basic and Higher Education.

The authority extended is by the General Assembly of the Commonwealth and is confirmed by the Governor, both by his signing and approving of the Acts and by his appointment of the members of the State Board.

During our survey we learned that on several occasions the Department of Public Instruction staff members have checked pending policies and plans with other State Departments and/or officials prior to discussing them with the State Board. Most such contacts were made at the request of these other Departments and officials. Apparently the procedure conforms to "State Policy" which existed prior to the formation of the State Board and to the granting of its present authority.

It is certainly important that all State Departments work cooperatively together on all Commonwealth problems. However, a new educational policy or plan is not ready to be coordinated with other departments until it has been considered and/or acted upon by the State Board. In a like manner, until State educational funds have been appropriated and budgeted and until Federal educational funds have been requested, received and budgeted by action of the State Board, the involvements of other Departments should not begin except as requested by the State Board.

The State Board is the only duly and legally constituted representative of the General Assembly and the Governor in matters pertaining to the Public School Code and the several Acts related thereto. It is the supervisory authority of the Department of Public Instruction and is the sole representative of the Governor in matters pertaining to the Department of Public Instruction. Any continuing areas of inter-departmental concern over authority and responsibility should be discussed with the Governor in order that sound organizational lines of both authority and responsibility can be specifically defined.

THE EDUCATION CODE

The laws pertaining to public education in Pennsylvania have been materially modified by the passage of Acts 299, 463, and 484. As is explained in other sections of this report, these major modifications have not been completely coordinated, either administratively or legislatively. Acts 463 and 484 overlap in many respects and Act 299 could easily supercede both of them in connection with district reorganization and boundaries relating to all types of programs. Legislation should be sought by the State Board to interrelate the provisions of these Acts; to establish uniform standards and supervision for the various types and levels of programs covered; and to make financing and participation provisions more uniformly applicable to Vocational-technical programs as approved by the Board wherever such programs are offered.

Some specific itmes which should be legislatively adjusted in Acts 463 and 484 are:

1. The premium placed on the transporting of students to area schools should be eliminated. The additional funds mandated in the Act on an ADM basis should be allowed in an attendance area for all vocational-technical programs whether located in an area school or not. Emphasis should be placed on quality education which meets needs rather than on the transportation of students.

2. State participation in community colleges should be mandated on the same basis as it is for technical institutes. The permissive provisions in Act 484 should be removed.

3. Limitations on which districts are allowed to establish area vocational-technical districts, technical institutes, or any other type of school enabled by legislation should be removed from the law. If any restrictions are desirable they should be by policy decisions made by the State Board following complete surveys in counties and districts and a determination of the need for new facilities and the availability of existing facilities.

4. Uniformity of reimbursement should be established for all types of vocational-technical education in both comprehensive and area high schools.

Recommendations concerning the financing of vocational-technical education, the allocation of Federal assistance to the districts, salaries for the Department of Public Instruction, the State Board as a policy making and administrative unit, and general revisions in the Education Code are contained in the body of this section.

SECTION VII

SUPERVISION, EVALUATION, AND CERTIFICATION

In the past and currently the Bureau of Technical and Continuing Education has not been able to provide much supervision or evaluation of vocational-technical programs. Assistance in other areas such as curriculum development has also been at a minimum. This has been primarily due to lack of staff, but also involved has been the fact that once a program is approved for ADM participation it seems to be forgotten and goes on receiving Federal funds year after year whether the program is good, bad, or indifferent.

A regional office arrangement, with adequate staff, as recommended in Section III, would tend to correct this condition and would materially aid local and area districts in providing more adequate skill-centered training and education. Following are some of the major areas of service which should be provided by the Director of Vocational-Technical Education through the State and Regional offices.

CURRICULUM DEVELOPMENT

A primary need is for curriculum development work. Very little of this has been done in any of the vocational or technical programs operating in Pennsylvania since World War II. The last major drive in curriculum work and in the structuring of course outlines was motivated and in some instances required by the Veteran's Administration during the late 1940's and early 1950's. Most vocational programs are still using the outlines developed during that period. There, however, is little uniformity in the curricula used in the same subject area by various schools; and often there is considerable difference in the material and methods used by different teachers in the same school system.

The Department of Public Instruction has not been able to coordinate the use of curricula nor has it been able to develop many suggested curricula or course outlines for use by vocational schools or classes through the State. The new State Plan calls for more curriculum development and coordination at the State level. Staff must be made available to implement this program and local districts must be provided with basic outlines and materials from which they can structure modified curricula to meet their individualized local needs.

It is a waste of time and effort for each district to start developing curricula of its own. Generall, if a group of teachers, even working with an advisory committee, implement a new program, they are forced to duplicate years of work which has been performed elsewhere in the nation. Therefore, curriculum development must be supervised, at least to the extent that a local school or district will build upon the best materials already available rather than attempt to implement new programs solely from an analysis of job requirements as reported by a small local advisory group or, as is done in most districts, by the teacher structuring work on a day to day basis.

The State Board should set standards for the preparation, use, and evaluation of curricula on participatable vocational-technical programs and should, on an incentive basis, provide more participation for superior programs than for average ones, and perhaps authorize no Federal participation for inferior programs which do not actually provide skill-centered training.

In addition, the Bureau should conduct curriculum development and training classes and seminars for district curriculum personnel. It also should develop and instruct district personnel in the use of instructional devices and aids to help implement such curricula.

Curriculum development for all types of vocational-technical education in all levels of schools must be planned, coordinated, and the products evaluated and disseminated by the Department. There must be as much acceptability and transferability between levels of schools as possible. There must be a practical application to employers' requirements. The Commonwealth requires a planned sequence of vocational-technical education which is possible only when all vocational-technical curricula are related to the needs of both employers and students and when each type of school works together in the preparation and implementation.

RESEARCH AND EVALUATION

It is the intent of Federal legislation pertaining to vocational-technical education that as much of the Federal monies as possible be used to research and develop new and better programs of vocational-technical education and to evaluate programs. In the past, Federal vocational funds have been used in Pennsylvania primarily to provide an ADM participation to on-going programs in vocational subjects, whether such programs met the needs of potential employers or not.

The new State Plan requires that the Department evaluate programs on a regular basis. This will require additional staff to the extent of at least two Field Representatives in each of the four Regional Offices recommended for the administration of vocational-technical education in the Commonwealth. Evaluation by such Field Representatives must be based on a standard method established by the State Board and the Department after conferring with district representatives.

A continuing study of the evaluation methods and techniques should be conducted by the Board and definite criteria established, not only for program operation but for the continuation of ADM subsidy to on-going programs.

Evaluation teams must be of as much assistance to local districts as possible. Their function must not be one of policing but must involve motivation of districts to improve existing programs and to expand their vocational offerings by revising currently non-participatable programs so that they can become sufficiently skill-centered to be participatable, whether located in area or local schools. For example: many school districts are operating Homemaking and Home Economics programs which are skill-centered but which are not reimbursable, partially because the local district is not aware of the legal possibilities of participation and partially because the time structure and course sequence have not been arranged in such a way as to be primarily skill-centered.

In a like manner, many industrial arts programs offered in the last two or three years of high school are as much skill-centered as many so-called vocational courses offered in separate vocational facilities. Participation has not been available for these programs because of lack of evaluation by the Department of Public Instruction and because of the restrictive teacher certification standards which have required Trade and Industrial and other participated programs to be instructed by "vocationally" certified teachers.

Evaluation and research will take many forms and must be continuous to be effective. Several areas which require evaluation or further research have been discussed in other sections of this report.

VOCATIONAL TEACHER TRAINING AND CERTIFICATION

The entire area of the training and certification of vocational-technical teachers must be researched, evaluated, and improved by the State Board and the Department.

The "work-experience" method of vocational teacher certification must be continued on a modified basis; but in addition other avenues of teacher preparation must lead to vocational and/or general certification acceptable for program participation and reimbursement.

There are not enough vocationally certified teachers in the Commonwealth to provide all of the instruction which will be required in the many new area vocational-technical facilities which are approved and will be operating within the next few years and all the skill-centered instructors needed in comprehensive schools and post-high school institutions. Therefore, it is essential that the State Board authorize a study of the certification requirements currently in force and approve revisions which will establish a broader certification base.

Vocational teacher certification standards were established many years ago and were probably practical, and may be even advisable, at that time when the usual vocational course was a limited skill shop-centered or apprentice activity. Today, however, occupational-vocational-technical-business education has been materially expanded at both ends of the training continuum and required broader teacher certification standards. Most skill-centered curricula of the future will not be taught adequately in a half-day shop-oriented facility. It is becoming increasingly necessary to structure such curricula on a course-centered schedule. The single-skilled worker who has become the single-skilled teacher will not be able to teach the multiple phases of such curricula. He will be able to teach a course or a laboratory but not the entire vocational portion of a curriculum.

Particularly in the Business and Distributive Education fields and in the technologies, it is very difficult to find a qualified teacher who can, under the shop-centered concept, teach all phases of an occupation to a group of students at one time in one shop. The three-hour shops in the technologies must be broken down into courses and laboratories with a specialist teaching each phase. For example, an individual teacher who may be a competent radio repairman and who can qualify as a vocational teacher of electronics is not able to teach all of the courses required in the various specialties in electronics. He, therfore, should be assigned only to a class or laboratory relating specifically to his competencies rather than as at present to have the responsibility for teaching students in all phases of electronics, nucleonics, and other related specialties.

Many of the generally certified academic teachers will also be required to offer specific courses in most of the skill-centered fields. It is not necessary, nor even of material value, whether such a teacher, for example a teacher of chemistry, has had routine industrial experience in some fields such as water analysis before he is allowed to teach chemical technology or the scientific orientation courses required for such a technology.

The possibility of not requiring certification for some or all of the teachers in vocational-technical aspects of post-high school programs should also be explored. The entire field of certification of occupational-vocational-technical-business teachers must be surveyed and modified to meet present requirements and needs.

COUNSELING AND GUIDANCE

Vocational counseling and guidance has theoretically been a function of the Bureau of Technical and Continuing Education. However, with only one staff member assigned to this service in Harrisburg, it has not been possible for services to be offered to districts which operate vocational-technical programs. Therefore, counseling and guidance has been primarily a local school district function.

Many recent studies in the State have indicated that few, if any, of the school districts are offering complete counseling and guidance service to all students. Particularly lacking has been vocational counseling and guidance. Most personnel engaged in these functions are not really qualified to advise and/or test in the fields of vocational competency, motivation, or interest. Constant changes in job requirements and opportunities have resulted in counselors being poorly informed as to work conditions as they are today and as they probably will be when the student completes a prescribed curriculum. Guidance in all schools, and particularly in those offering vocational-technical programs, must be expanded and balanced more adequately than at present. The multi-purpose aspect of counseling must include individual analysis which will enable the counselor:

1. To give the student and parents an understanding of the student's educational and occupational strengths and weaknesses.
2. To help evaluate educational and career opportunities.
3. To help the student and parents develop appropriate educational plans whether in academic or vocational areas.
4. To stimulate and motivate the student to attain educational and career goals.
5. To follow up the student's post-school activities and progress and make research reports on the findings.

The counselor should assist each student in evaluating his potential for a vocational area and motivate him to follow this evaluation. However, once a student has made a choice of curriculum, vocational or otherwise, it cannot be assumed that he cannot or should not change. It may be that the student would be better served by another program in the school. Counseling must be realistic, flexible, and continuous.

To provide such services, the counselor must have a great deal of information about academic programs and schools, and about the 40,000 occupations available in the United States. He must help fit the individual student into a program which is interesting, practical, and attainable.

In order to do good vocational counseling, the counselor:

1. Must know the classification and description of major jobs.
2. Must know the training and work placement facilities.
3. Must know the occupations in which there is the greatest demand, opportunities for advancement, employment security, shortage of available workers, and shortage of competent workers.
4. Must have information as to what jobs will be available to the students upon graduation.
5. Must provide each student with occupational information about vocational areas in which training is provided. Students should be taught as much as possible about the nature of work, job ranges, opportunities, hazards, skills required, knowledge needed, and other major factors concerning the occupations in which they are interested.
6. Must assist in every way possible in making job placements.

To do such an expansive job, the counselor must be extremely well prepared and must have enough time to allot to each student to permit complete coverage of the student's needs.

It is necessary that the reorganized Bureau of Technical and Continuing Education provide more counseling service and supervision. This should involve the conducting of special seminars, the prescribing of vocational counseling standards, and the training and education requirements which should be implemented in order to assure that counselors of the future will have sufficient knowledges of jobs and competencies in vocational counseling to handle adequately the expanding student needs in these areas.

The State Board should immediately begin studies of new curriculum requirements, research, and evaluation needs and standards, vocational teacher certification, and counseling and guidance requirements in vocational-technical education. We recommend that these studies be conducted by consultants to the State Board and not by presently certified vocational teachers, supervisors, counselors, or directors, and also not by representatives of institutions which have been conducting vocational teacher training. These interested groups should be consulted during the studies, but should not formulate the final recommendations to the State Board.

In addition to the survey suggested above, the State Board should instruct the Bureau of Technical and Continuing Education to:

1. Conduct in-service workshops for present and potential administrators.
2. Strengthen present programs for training administrators.
3. Inaugurate a program of internship under which candidates for administrative and supervisory positions could spend a year in leadership positions under the joint sponsorship of selected local administrators and Bureau representatives.
4. Design and conduct intensive seminars for the orientation of selected instructors in the teaching of broad occupational preparation courses.
5. Sponsor research projects aimed at discovering the best mutually supportive relationship between vocational courses, liberal arts courses, and college preparatory courses.
6. Activate a committee composed of representatives of all the vocational services to review the reimbursement patterns and reporting mechanics and to devise one pattern that can be followed by all the services.

7. Sponsor a well financed and ably manned program of curriculum development and implementation geared to the needs of local districts and involving interested agencies in agriculture, business, and industry.

8. Conduct or sponsor intensive studies and experiments in the development and use of self-instruction devices which can assist a good teacher in providing extended educational experiences for his students.

9. Conduct studies of the district problems in obtaining, training, and up-dating the competencies of teachers in the several vocational-technical subject matter areas.

Results from these Bureau studies, seminars, etc., should be made a part of the recommended survey. This combined information would materially assist the State Board in establishing the modified procedures and policies discussed in this section.

SECTION VIII

EDUCATIONAL SPECIFICATIONS

By far, the majority of vocational-technical educational facilities which have operated in Pennsylvania in the past have not been developed in accordance with sound educational planning and specifications.

This section of the report discusses the need for more adequate preliminary planning of facilities and equipment and suggests methods by which such standards should be administered in the Commonwealth through the Department of Public Instruction and the State Board.

NECESSITY FOR EDUCATIONAL PLANNING

There may have been occasions on which the chief concern in erecting and equipping a school building was its cost. Today, though, thoughtful educational planners recognize that true economy derives from an input-output ratio, a percentage return on an investment. The cheapest school plant may not be the most economical and true economy depends not so much on cost per square foot or the number of years the buildings will stand as on the contribution that the school plant makes to the educational process.

In vocational-technical education it has always been accepted that the adequacy of laboratory and shop equipment directly affects the quality and quantity of the learning which takes place within the facility. Recent developments in educational methods and in instruction technology have accentuated the importance of school facilities. Research and experimentation are demonstrating that the school plant and equipment play a significant part in motivating learning and in improving instruction. Every good teacher is aware of the importance of the "educational climate" which can be provided by a well planned building. As he strives for acceleration and excellence in his teaching, the teacher is more and more dependent upon teaching aids and devices which help him to direct his students through effective educational experiences.

Renewed recognition of the pedagogical principal that not everything which needs to be learned has to be taught is leading to intensified efforts in providing self-instruction devices and facilities which will spur and direct students in their individual learning efforts.

Among the more obvious examples of facilities which teach, or abet learning, are language laboratories and tapes, listening rooms in the library or audio-visual center, teaching machines and programmed instruction books, closed circuit television, and individual carrels or learning laboratories.

Well equipped and arranged laboratories come to mind immediately as examples of facilities which assist a good teacher in providing educational experiences for his students. Less obvious examples are well designed student lounges with furniture groupings which encourage intimate discussion or quiet campus corners where architecture and landscaping combine to effect an appreciation of art.

The providing of such educational facilities requires extensive and thorough educational planning, planning which eventuates in the framing of definite educational specifications for the guidance of the architect. Adequate specifications should provide the guidelines by which any able architect can design a school plant which will not only house the necessary educational activities in best special relationship but will become in its every segment a functioning part of the educational program.

EDUCATIONAL SPECIFICATIONS AND THE COMMUNITY SURVEY

The study and team planning necessary for the writing of educational specifications are a natural next step after the kind of community occupational survey that is currently being made in Pennsylvania before the establishing of an area technical school, a technical division of the community college, or, for that matter, a high school vocational program. Obviously it is necessary to determine by such a survey what jobs are available and how many, and what job competencies are required for entrance into employment at both the entry level and the advanced levels.

The educational planning team picks up where the community occupational survey leaves off. The survey determines the jobs and the job competencies. It is now up to the educational planner to blueprint the educational program necessary for providing the job competencies required for placement and also for providing the education needed by an individual to assume his responsibilities as a citizen in today's industrial economy.

Educational planning is a complex operation. Its phases and processes cannot be sequenced so that one may consider them one at a time in carrying out a program. They are interrelated and, to some extent, must be carried out simultaneously. The complexity of the studies necessary becomes obvious when one considers that the planning starts with the educational philosophy of the district and translates this into the desired outcomes of each course, and then in turn translates these into the facilities necessary. This process encompasses everything from the site plan to the equipment in a teacher's office and the electronic circuitry necessary for bringing television programs, live and video-tapes, to selected classrooms. The activities and the traffic flow in every educational space must be identified and plotted. The educational spaces must be grouped together in areas in centers which provide the major division of space for campus utilization. These centers must be arranged in such a way as to reduce internal traffic between centers to a minimum, and to provide for to-and-from school traffic with the least possible confusion. With this information available, the architect will be able to design a school plant that will "help educate."

SECTION VIII
Educational Specifications

WHO SHOULD BE INVOLVED IN EDUCATIONAL PLANNING?

Ideally, the educational specifications should be written as the culmination of a planning study which has involved representatives of the school board, the administration, teachers, the architect, department heads in the major instruction departments, and consultants who are experts in the planning of school facilities and in communications media.

It is important that teachers be involved in the planning operation and in the writing of the educational specifications. Here a problem presents itself. At the time of planning area vocational-technical schools usually no staff has been employed. Possibly it would be feasible to employ a few key staff members a year or more in advance of opening the school and let them work on the developing of the educational specifications. If this is not budgetarily feasible, then it would seem that the State Department of Public Instruction should provide staff or assist in financing so that a realistic approach might be made to the educational planning.

The importance of educational planning and the provision of educational facilities would seem to indicate that it might be well for the Department of Public Instruction to arrange now for a series of workshops conducted by the best experts nationally available in order to give selected State personnel some training in the complex art and science of writing educational specifications.

SITE AND GENERAL CAMPUS PLANNING

The site planning will depend to a considerable extent on the nature of the site itself. It is not always possible for a Board of Education to secure an ideal site for the construction of a school plant. The educational centers and the several facilities will have to be located according to the best geographical potentials of the site. At the same time, the complete plant must house all of the educational activities which are identified and for which specifications are written as a result of the detailed analysis of the activities necessary in the several subject areas.

DISTRICT PHILOSOPHY AND BROAD EDUCATIONAL OBJECTIVES

Philosophy and objectives are basic to all planning, of course, and should be definitely enunciated and approved by the Board of Education as a first step in the complex process of developing educational specifications. They should include:

1. The place of public education in the community and the specific functions to be performed by the unit being planned.

2. The relationship of public education to Commonwealth developments and the place the unit being planned plays in such development.

3. The relationship of the unit being planned to the whole of community education and especially in vocational-technical education the relationship of vocational to general or academic education.

4. The relationship of the unit being planned to the needs of students and the importance of a saleable education for all who desire it. It is only by individual fulfillment, by the development of each individual's abilities to the greatest possible degree, that the Commonwealth can amass the greatest possible array of manpower skills.

FINANCIAL LIMITATIONS

It is essential that any educational planning be realistic in terms of the financial limitations which it faces. It is always the hope that the financial limitations can be set in terms of educational needs and can be elastic enough and generaous enough to provide for the fulfillment of these needs. However, there comes a point at which the financial abilities of the district are very limited, and planning must be done in terms of these limitations. Every effort should be made, however, to avoid setting these limitations in terms of concrete dollars and cents before any planning has been done to indicate the limits of a wise investement in educational effort. Usually some accommodation can be achieved by scheduling school plant construction in phases so that facilities can be provided as growth and expansion of the program require. Naturally, maximum economy is always desirable, but here again economy should be measured in terms of the plant's contribution to the educational goals rather than in terms of the price tag on each building or facility.

THE CAMPUS ATMOSPHERE

The general atmosphere of the campus and the school plant should be such as to establish the "image" of the educational objectives set for the institution. Obviously the atmosphere or image should be different for a comprehensive high school, an area vocational-technical school, and a community college. It is also true that the atmosphere will differ for different area vocational-technical schools because of different community attitudes and objectives and needs. The campus atmosphere is influenced by all the requirements discussed in this section. Each community will impose different objectives and requirements.

RELATIONSHIPS AND TRAFFIC PATTERNS

The trend in campus planning now is to locate the library and audio-visual center, or the instructional resource center as it is sometimes called, near the center of the campus and to ring it with the groups of buildings or educational centers which house the total education program.

(Humanities Center, Technical Center, Administration and Pupil Personnel Center, Student Center, and so forth.) The total complex is then encircled by a road wide enough to take care of the access and egress traffic. Parking must be provided for the cars of all employees, visitors, and students. The parking lots are usually located around the campus-circling drive so as to be adjacent to the major education centers. Loading and unloading areas for school busses and public busses, if such serve the campus, apart from the traffic of individual automobiles. Side-walks for pedestrians should be provided for delivering students to campus disbursement centers distributed in keeping with the on-campus student traffic.

The parking lot for parents and other school visitors should be adjacent to the Administration Center. The parking needs of evening school and adult school students should be considered separately from those of the day students. The concentration of students differs from day to evening. Special parking should also be provided for athletic events if these draw significant numbers of people from the community. Sometimes such parking can be arranged in collaboration with nearby commercial centers.

On-campus traffic between educational centers and between the educational spaces within a given center can best be planned after a study of the traffic flow on similar campuses and an analysis of the scheduling of students. A careful student traffic analysis will indicate the routes of heavy traffic and, to some extent, the location relationships of educa-tion centers. The extent of multiple use of special education areas will make a difference in the on-campus traffic flow. For example, in a small school the Graphic Arts laboratory might be used by industrial arts classes, occupational preparation classes in the several skills involved in graphic arts, and by the Business Education Division for training in the use of duplicating equipment. It might also be used by the Art Department for the duplication of art projects. In a larger school the Business Education Center and the Industrial Art Center might have separate laboratories and the Art Department might have its own minimally equipped lab for reproduction of art work.

PLANNING THE EDUCATIONAL CENTERS

Planning the several educational centers which make up the total campus activity is basically a matter of deciding first what courses will be included in each of the centers and, second, where the centers will be located with reference to each other and to the general campus plan or site plan. Some activities naturally group themselves into educational centers. The Administration and Pupil Personnel Services Center is rather standard. It includes the Health Services, the Counseling and Guidance Services, the Attendance Office, and the usual administration functions. The Humanities Center customarily includes English, foreign language and the social studies. In some cases math and science are grouped together as a separate center, and in some cases these are included in a Technical Center along with laboratories for electronics and other technical courses. If the Business Education program is large enough it tends to be a center unto itself. If not, it would share space with another program which is as related as possible. The Student Center is almost always a thing unto itself in a school large enough to justify the separate cluster of buildings. It includes the student lounge, the food services, dining areas, etc. Sometimes the Student Center includes the library or instructional resource center to form a campus nucleus.

In a like manner, all individual centers must be planned and located. This planning starts with a statement of general objectives and educational activities which will be carried on in the center and proceeds to the careful analysis of the specific objectives and activities of each of the subject areas or courses which will be offered in the center.

PLANNING THE INDIVIDUAL EDUCATIONAL AREAS AND SPACES

The key, and in some ways the beginning point, of all educational planning lies in the consideration of the educational objectives and the activities which are served by each education space. The writing of educational specifications here is usually approached under two categories: program considerations and facility consideration. As the words imply, the program considerations deal with the educational objectives, general and specific, and the activities which go on in achieving these objectives. Facility considerations translate these into spaces, furniture, and equipment. This is the end point in educational specifications writing.

Program Considerations

At this point the real hard work in educational planning begins. Because it is from an analysis of the educational outcomes and the educational experiences necessary for bringing about these outcomes that we really design an educational program and provide the specifications from which the architect is able to house the program and design a plan which will do part of the educating involved in the school's total purpose. The items studied in this connection may be summarized under the following points:

General Objectives of the Subject Area: This item usually includes a statement of the basic premises of the subject area and a statement of some of the general objectives which will pave the way for a listing of specific objectives of each course.

Specific Objectives of Each Course: At this point the analysis becomes as detailed as it can possibly be made with the manpower and time available. Essentially it involves charting each of the desired educational outcomes of the course and indicating the methods by which these outcomes may be achieved. The educational experiences to which students may be subjected in company with the teacher, in small groups without a teacher, or in individual situations. During this phase, room sizes and estimated times required for each instructional activity are determined and plotted in order to be related to facility requirements.

Trends in Subject Matter and Teaching: Experimentation in content and methods of teaching is proceeding at such a rapid pace now that any educational planning must take into consideration discernible trends which may influence the facilities needed in the conducting of an educational program.

Orientation and Relationships: Here the planning team should carefully consider the activities involved in all educational experiences and should chart the traffic routes that will probably be taken by students, by faculty, and by other staff members in carrying on the functions of the educational area and center involved.

Activities: The analysis of educational activities in the given space or area should be as detailed as possible. The more thoroughly the architect understands the activities which go on in the given space, the better he can provide that space with facilities which will be functional and attractive.

Facility Considerations

At this point the planning teams come to grips with the actual writing of the educational specifications from which the architect will work. Facility considerations include the following.

Orientation and Relationships: Here the planning team explains to the architect the educational functions of each space included in a given area, showing the relationships of one space to another, and indicating which areas should have free access from the outside and the special relationship of each area to the other areas.

The Traffic Flow: This provides the architect with a good concept of what goes on in a given education area. It helps him to decide where to place doors, hallways, entrances, and exits.

Space Requirements: The space needed in a given education area is calculated from on the basis of the number of student hours involved per week and related to the total school program and to each subject requirement. For example, in a community college of 2,500 students attending school on average of 16 hours per week, 40,000 student hours will be spent on campus. From studies of time schedules in several similar community colleges it is found what time the average student spends in each course and subject area. From these averages the total space requirements can be computed and plotted. The architect is then able to use the facility specifications to prepare his original drawings.

Final Planning

The summary of facility requirements is worked out by the planners, the architects, and the builders. Specific arrangement of space is related to placement of furniture and equipment, to storage, to utilities, to visual-thermo and acoustical considerations, and to any special arrangements or requirements which the planners may specify.

A practical educational unit has been constructed and the district is ready to begin providing its part of the vocational-technical education continuum required in the Commonwealth.

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We recommend that the State Board establish specification standards which will be supervised by the Regional Directors of the Bureau of Technical and Continuing Education and in addition that:

1. One or more centers be established for the briefing of administrators and supervisors in the writing of educational specifications as a basis for the planning of facilities, and

2. The Bureau co-sponsor with one or more educational institutions a seminar in the planning of educational facilities. Leadership in the seminar (s) should be drawn from the best experts nationally available in this important and changing aspect in education.

3. Following the above suggested seminar (s) selected local districts should be financially encouraged to experiment with facilities that will increase the efficiency and effectiveness of vocational and technical education in the Commonwealth.

SECTION IX

IN SUMMARY

This report has emphasized the need for all sections of the Commonwealth to survey their individual needs for vocational-technical education and to establish the type of school or schools required to meet these needs.

Many recommendations have been contained in the preceding sections which we hope will assist the State Board and the Department of Public Instruction in planning and implementing the best possible types of programs in vocational-technical education.

Continued study is necessary, progress must be planned, charted, measured, and evaluated. Representatives of all counties and communities must become more aware of the problems facing the schools and those facing industry in connection with the adequate training of personnel. This knowledge must be obtained by survey from community agencies, associations, coordinating councils, industrial associations, labor organizations, and other groups. It must also be obtained from individuals who are interested in the educational and training problems which affect them and their children.

All educators and those interested in education must be made aware of the fact that some 32 million young people will pass their 18th birthday during the next 10 years. Most of these will have to be considered for employment placements and must receive adequate training and education in job areas in which vacancies will exist and promotional opportunities are available.

All segments of the Commonwealth must work together and understand that job placements must be made on the basis of aptitude and interest and the training received, rather than on the basis of student or parental hopes. Any job in which a placement is effected should involve interest and result in adequate performance and the pride of workmanship. This should be equally true whether such work involves the use of the hands, the head, or both.

Society must recognize that prestige in employment is obtained from doing a job well, rather than from the level of operation if such level is not practically obtainable.

Parents must participate to a greater extent with their children in planning a realistic educational program with the help of better counseling. They must know the child's abilities and interests and should work with school, industrial, and employment counselors in connection with job preparation and job placement.

Section IX
In Summary

The schools, the industries, the departments of government, the industrial associations, the labor organizations, etc., must become more familiar with and publicize the variances in salary and promotional possibilities in industries as these relate to adequate preparation for a job. The public must become aware of not only the differences in employment but the interrelations of occupations, particularly within technological job families.

Industry generally prefers to employ workers in a higher age bracket than those leaving high school. They prefer to have their employees complete some adult school or post-high school work. However, for the next several years we will still continue to have nearly 40 percent of all students not continuing their education beyond the high school level. These students cannot be allowed to compete with the present unemployed as unskilled workers. They must be trained in comprehensive high schools and area schools.

One of the biggest problems to be solved by industry, society, and the schools is the placement of a young worker with only a general high school diploma. This problem also exists to a decreasingly smaller extent with other generalized degrees, such as the A.A., A.B., or advanced degrees which do not involve knowledges utilizable in the employment market.

The community must be made aware of the reasons for unemployment, employee turnover, and job dissatisfaction. Industry, the schools, and employment departments must publicize these problems and the solutions, some of which have been discussed in this report.

It is admirable that the State Board and the Department want to raise educational standards. In the future we will need more and more people with more and higher degrees. But our certificates and degrees of the future will have to be more and more specialized. It is becoming more difficult every year to live in the past. The future is happening today. Every member of society must prepare for it and be a part of it.

Comprehensive education and adequate industrial and sociological training are needed by all. The Community must be made aware of this. Agencies and individuals must demand it. The Schools, industries, labor organizations, and public and private agencies must work together to develop the "comprehensive" American citizen of tomorrow. This requires "comprehensive" schools and vocational schools which the public must understand, plan for, finance, and maintain. The only serious cost factor for education is in a society which is not adequately training its workers of tomorrow.